

COMMON SENSE
ON THE
Mechanical Pathology and Treatment
OF
CHRONIC DISEASES
OF THE
MALE AND FEMALE SYSTEMS.

BY EDMUND P. BANNING, M.D.

TWENTY-FIRST EDITION,

Revised, Enlarged, and Embellished with 38 Illustrative Engravings,
designed expressly for this work.

TOGETHER WITH

TWO LECTURES BY THE AUTHOR

- I.—HIS LECTURE ON THE PHILOSOPHY OF THE HUMAN VOICE,
CONTAINING IMPORTANT HINTS TO PUBLIC SPEAKERS
AND SINGERS.
- II.—HIS LECTURE ON DRESS, LAYING DOWN THE RULES FOR
THE REGULATION OF MALE AND FEMALE ATTIRE.

It is not the Steam, but the disturbed or broken engine that is at fault.

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BY EDMUND P. BANNING, M. D.,

In the Clerk's Office of the District Court of the United States for the Southern
District of New York

THE
BANNING BRACES

AND

BRACE TRUSSES,

FOR RUPTURED AND BROKEN-DOWN
SOLDIERS:

WITH TRUE COPIES OF OFFICIAL HOSPITAL REPORTS,

GIVING THE HISTORY OF

THEIR ADOPTION BY GOVERNMENT

IN THE DEPARTMENT OF THE EAST.

~~~~~  
PUBLISHED FOR THE USE OF THE ARMY.  
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OFFICE:
No. 22 BOND STREET, N. Y.



THE BANNING BRACE TRUSS.

Its Exclusive Properties.

1. It acts as a general and genial support to the entire body; assists in standing and marching, and protects against the weight of heavy dress-skirts and military accoutrements upon the stomach and bowels, the tendency of which latter manifestly is to superinduce weakness of the bowels and spine, Piles, Prolapsus Ani, Urinary derangement, Constipation, Diarrhœa, Hernia, and (in the female) Uterine displacement.

2. It is absolutely immovable when on the wearer, under any position or effort of the body.

3. Through its steady elevation and support of the bowels (or breakwater action) it removes a perpetual cause of protrusion, and renders not more than one fourth the ordinary pressure requisite to seal the hernial openings, and exerts only the most moderate and genial force, except momentarily, under a sudden protruding action.

4. It absolutely protects against the hernia at the opposite side, which the crowding force of one-sided trusses so usually produce.

5. Without the least inconvenience to the wearer, it is capable of supporting a weak spine and abdomen, Hemorrhoidal Tumors, Prolapsus Ani, an Umbilical and a double

Femoral and Inguinal Hernia, simultaneously, upon the same patient.

History of its adoption by Government, respectfully submitted.

MEDICAL INSPECTOR GENERAL'S OFFICE,
WASHINGTON, D. C., *June 28, 1864.*

COLONEL: Some time since you directed me to examine and report upon the truss presented by Dr. Banning, of New York. With your consent, I directed the instrument to be carefully tested in several of the army hospitals, under the direction of good and experienced surgeons. Their reports are herewith enclosed.

My own examination of the instrument led me to think favorably of it; but before recommending it for general use in the army, I would prefer its being subjected to a more extended trial, in order to ascertain its durability.

As Dr. B. is a regular graduate in medicine, and we have a hospital at which the fitting of trusses is made a specialty, I respectfully suggest the employment of Dr. B. as an Act'g Ass't Surgeon, and his being placed on duty in that hospital.

I have the honor to be,

Your obt. servt.,

JNO. M. CUYLER,

Med'l Insp'r U. S. A., Act'g Med'l Insp'r Gen'l.

Col. J. K. BARNES, *U. S. A.,*

Act'g Surg. Gen'l.

TRUE COPIES OF REPORTS.

U. S. GENERAL HOSPITAL,
ARMORY SQUARE,
WASHINGTON, *Feb.* 15, 1864.

SIR: I have the honor to state, that Lieut. Col. Cuyler, Act. Med. Inspector General, U. S. A., recently referred to me for examination, Banning's Brace with hernial attachment. Upon careful examination of the instrument, I was impressed with its principle of abdominal support, which relieves the abdominal parietes of much of the weight of the viscera, thereby lessening the amount of pressure required to occlude the ring and retain the gut.

I consented to the application of nine supporters with hernial attachment, upon patients presenting a variety of hernias, with complications, five of which were very intractable, and failed to be comfortably retained by any kind of Truss I had heretofore been able to procure. The patients have now worn the apparance for more than one week, and have been placed upon laborious duty, and directed to exercise freely and violently, so as to demonstrate fully the power and capacity of the instrument under the most adverse circumstances. I have to-day carefully examined each case and find the instruments perfectly comfortable and easy to the patients without any tendency to displacement, or to produce undue pressure or friction at any point. The ring is rendered patent, and the gut retained with much less pressure than by the ordinary truss, and in two cases which presented symptoms of an early protrusion of the intestines on the opposite side, they were entirely relieved by the support to the abdomen derived from the brace, and I have reason to believe thereby preventing a double hernia.

The spinal shoulder brace attachment, I have applied in three cases, where patients complained of weakness and pain in the lumbar and dorsal regions of the spine, two of these cases I diagnosed, chronic inflammation of the intervertebral cartilages, and both had been recommended for discharge; upon the application of the brace, the patients expressed themselves greatly supported and relieved. I have no doubt if the apparatus had been worn earlier by them, much suffering would have been prevented, and a more speedy cure obtained.

Among the many advantages of the Brace Truss over any other style I have examined or applied, are the following:

1st. By means of the elevation and support of the viscera, they hold the hernia more easily and securely.

2d. The pressure upon the ring may be graduated by a set screw, without diminishing the abdominal support.

3d. While retaining one hernia they, by support of the abdominal viscera, prevent another on the opposite side.

4th. They make no pressure upon the sacrum, as in the case with the ordinary truss, all opposing pressure being on the fleshy glutei.

5th. By passing above and inside the crestæ ill. it is not displaced, nor does it produce unpleasant pressure upon the ileum like the ordinary truss when the patient takes the recumbent posture.

6th. The apparatus is cool, light, and easy of adjustment, after being once well applied.

7th. Being perfect in its mechanical adaptation, free from the friction and unnecessary power required in the use of the ordinary truss to render patent the inguinal opening, it is less destructible.

I am of the opinion that the use of this brace truss in

the many complicated cases of hernia, when other forms of truss fail, would prove a success, and render many soldiers otherwise useless to the government available and valuable men for garrison and hospital duty, and respectfully request that the accompanying requisition be approved, so as to enable me to apply the apparatus to such cases as may require it, now in this hospital or that may be from time to time forwarded for that purpose.

Very respectfully,

Your obt. servt.,

D. W. BLISS,

Surg. U. S. Vols., in charge.

Surg. R. O. ABBOTT, U. S. A.

Medical Director,

Dept. of Washington.

HAREWOOD, U. S. A. GEN. HOSPITAL,

Feb. 17, 1864.

SIR: Agreeably to your request, Dr. Banning was permitted to apply some of his trusses to cases of hernia in this hospital, and I have respectfully to state, that they answered the purpose of a truss much better than any mechanical appliance I have seen. One of the cases alluded to was a very obstinate one, having persisted notwithstanding the repeated trials of other instruments, and was easily retained by the truss of Dr. Banning. I would recommend a more extensive trial of them in the hospitals

I have the honor to be,

Very respectfully,

Your obt. servt.,

R. B. BONTECOU,

Surg. U. S. Vol. in charge of Hospital.

Surg. J. M. CUYLER, U. S. A.

Act'g Inspector General.

U. S. A. GENERAL HOSPITAL,
CENTRAL PARK,
NEW YORK, April 6, 1864.

SIR: Dr. Banning presented himself at this hospital with a letter from yourself, directing surgeons in charge of hospitals, to afford him facilities for testing his truss; and, in accordance with a request of the Medical Inspector General, contained in a communication to medical directors (a copy of which Dr. Banning presented), I have the honor to state, that his truss has been applied to two cases of oblique inguinal hernia in this hospital, and, after a trial of ten days, I am of opinion that it is the best truss for oblique inguinal hernia, that has come under my notice. Its principal advantages appear to be, that it retains its position during the movements of the patient, and affords a steady and equable support to the abdomen, during coughing and other muscular movements, and thus diminishes greatly the amount of pressure necessary to retain the hernia. I deem it unnecessary to refer to other minor advantages and peculiarities of the truss.

I am, sir,

Very respectfully,

Your obedient serv't,

B. A. CLEMENTS,

Surgeon U. S. A., in charge.

Surg. CHAS. McDOUGAL, U. S. A.,
Medical Director,
Dept. of the East, New York City.

DE CAMP GENERAL HOSPITAL, U. S. A.,
DAVID'S ISLAND, NEW YORK HARBOR,
April 9, 1864.

SIR: I have been presented with several of Dr. Banning's "Brace Trusses," for the purpose of practically testing upon patients in this hospital, their value and advantages, and after a careful observation of their principles of construction and action, I do not hesitate to say, that I consider them to combine more qualities of excellence than any truss which I have before seen. The support which this improved truss affords to the abdominal organs, protects the soldier from the injurious effects which the weight of his accoutrements might otherwise occasion, an advantage of manifest importance in the military service.

In single hernia, while protecting the part affected, it appears to me to furnish by its equalization of abdominal support, perfect security to the hernial ring of the opposite side.

The hernial pressure can also be graduated without diminishing the abdominal support. In these particulars, I consider the truss of Dr. Banning to be unrivalled by any instrument of its kind, especially in its adaptation to the wants of the soldier. I should be glad to see it adopted for general use in the army.

Very respectfully, your obt. servt.,

WARREN WEBSTER,

Asst. Surg., U. S. A., in charge of Hospital.

Lieut. Col. CUYLER,

Act'g Med'l Insp'r General,

Washington, D. C.

Through Medical Director,

Dept. of the East.

U. S. GENERAL HOSPITAL,
ALEXANDRIA, VA., *May 1, 1864.*

SIR: I have the honor to report, that, in compliance with the order of Medical Inspector General Cuyler, of February 18, 1864, I have given Dr. E. P. Banning every facility in my power to test the utility of his combined apparatus, with and without hernia supporters; and have had it fitted to twenty-four cases of hernia and spinal difficulties in this hospital, ninety per cent. of which have proven a complete success. The medical officer, Dr. E. P. Dunning, A. A. Surgeon U. S. A., detailed to test and attend the suggestions and instructions of Dr. Banning, in regard to their adjustment, reports the following points of advantage:

- 1st. Absolute immobility while on the patient.
- 2d. Support to the abdominal viscera, thereby removing stress from the ring, and obviating the necessity of much pressure to occlude the ring.
- 3d. Protection from a hernia on the opposite side.
- 4th. Removal of all injurious pressure upon the sacrum by distribution of all the pressure upon the fleshy glutei muscles, and thereby supporting the soldier in marching.
- 5th. Holds or carries the soldier's accoutrements from the abdomen, and in this point of view would be of great importance to cavalymen as a preventive of hernia and spinal affections. In a word, from careful tests made upon the above-mentioned number of cases, I am gladly forced to conclude, that as an army brace and truss its extended use would result in the saving of both money and men to the government.

All of which is respectfully submitted with requisition enclosed.

I have the honor to be,
 Very respectfully,
 Your obt. servt.,
 EDWIN BENTLEY,
Surgeon U. S. Vols. in charge.

Surgeon R. O. ABBOTT, U. S. A.,
Medical Director,
Dept. of Washington, D. C.

BALTIMORE, MD., *March 27, 1864.*

List of men who have Dr. Banning's Truss and Spine Supporter, at Lafayette square.

GEO. W. BURROUGH, Co. D, 22d Regt. I. C., likes it; stands guard in it; comes down when he coughs.

WILLIAM R. DAVIS, Co. B, 20th I. C. Truss; likes it pretty well; does not come down when he coughs; thinks so.

GEO. BALCON, Co. A, 20th I. C. Truss. Teamster; likes it finely; never has been displaced since being altered a few days ago; does not drill, but can mount his horse without displacing.

MICHAEL QUIGLEY, Co. D, 20th I. C., prefers the old one; can not wear it with his belts on; has lost his old one, but says this is of no use to him; gives it up, is too large for him.

ALFRED R. BELL, musician. Truss. I do think it is a good thing; never lets hernia escape.

WM. H. LITTLE, musician, likes it very well; never lets hernia escape.

JAMES B. PITCHER brought his back of his own accord; cannot wear it, it always sustained the hernia. The Doctor worked a long time to fit this man, he complained of its hurting him.

JOSHUA HIFFARD, Co. A, 20th I. C., Q. M. Department. Likes it well. Truss. Says it supports his abdomen so as to feel comfortable; does not get out of place.

J. P. BARNES, Co. B, 20th I. C., likes it well; prefers it to the old one; has been only displaced once; can nail over head with it; is carpenter.

WM. B. DAVIS, Co. B, 20th, thinks he would like to keep it, but did not speak confidently in its praise; did not see him.

C. BACON,
Surgeon U. S. A.

All of the above imperfections could have been obviated.
BANNING.

FILBERT STREET HOSPITAL, U. S. A.,
PHILADELPHIA, PA., *June 9, 1864.*

Dr. Banning adjusted several trusses in this hospital, which so far promise valuable relief to the cases to which they have been applied. The abdominal support afforded by Dr. Banning's truss is of much advantage, and in cases of oblique inguinal hernia, will generally effect radical cures.

The general lightness of the truss, and ready adaptation to different varieties of hernia, render it, in my opinion, a valuable instrument.

It is evident from the material abdominal support before referred to, these trusses are not required to exercise a

great deal of pressure about the canal, thus preventing the pain and oppression sometimes produced by other trusses.

SAML. A. STARROW,

Asst. Surg. U. S. Army,

In charge Hospital.

SECOND REPORT BY D. W. BLISS.

U. S. GENERAL HOSPITAL,

ARMORY SQUARE, WASHINGTON, D. C.,

July 2, 1864.

SIR: I have the honor to report, that I have now applied eighty-five of Banning's Brace Trusses, embracing the usual variety of hernia, and have been especially gratified at the result, only failing in two cases. It is proper, however, to remark, that many of the patients return to duty immediately, or very soon after the fitting, and have passed out of my immediate observation. I have, however, made written requests to commanding officers of the companies to which they belong, also requested the patients to return at once in case the truss should prove ineffectual, or become in any way injured so as to impair its usefulness, but few patients have returned requiring refitting, or to have repairs made to the instruments. Much of the success attending the application of these instruments, I believe, is due to the personal assistance of Dr. Banning.

My experience leads me to the opinion that this truss should be carefully and scientifically fitted, and when so done, is far superior as a retentive apparatus for hernia to any instrument within my knowledge.

Since you designated this hospital as the one where men should be forwarded to be fitted with trusses, I have be-

come satisfied that from the large number of hernias among men belonging to the Veteran Reserve Corps, it would be a great saving of men and money to select some medical officer of good mechanical ingenuity and professional practice, to personally apply all trusses, and superintend their repairs.

Very respectfully,
Your obt. servt.,
D. W. BLISS,
Surg. U. S. V. in charge.

Surg. R. O. ABBOTT, U. S. A.,
Medical Director,
Dept. of Washington.

OFFICIAL ADOPTION OF THE BRACE TRUSSES IN THE DEPARTMENT OF THE EAST.

NEW YORK, *August 24, 1864.*

SIR: I respectfully propose to, under your direction, take charge of the department of hernia within your department, give my personal energies to preserve a large proportion of now useless, ruptured soldiers to full invalid corps service, and to furnish to government my brace trusses for that object. * * * *

Your obt. servt.,
E. P. BANNING, M. D.

To Surgeon C. McDOUGALL,
Medical Director,
Dept. of the East.

MEDICAL DIRECTOR'S OFFICE, D. E.,
N. Y., August 24, 1864.

Respectfully transmitted for the consideration of the Acting Surgeon General. The Banning Truss has been highly commended by many army surgeons in charge of hospitals. It is, in my opinion, superior in all of its indications, to any others I have examined.

The proposition of Dr. Banning, to attend personally to each case, I hope will be favorably considered, as it will insure a fitting truss, and enable many to return to duty who would otherwise be discharged from service.

C. McDougall,
Surgeon U. S. A.,
Medical Director,
Dept. of the East

True copy respectfully returned to Surgeon Chas. McDougall, U. S. A., Medical Director at New York. The proposition of Dr. E. P. Banning is accepted.

By order of the Acting Surg. General.

W. C. SPENCER,
Ass't Surg. U. S. A.

S. G. OFFICE, Aug. 26, 1864.

[EXTRACT.]

LOVELL GENERAL HOSPITAL,
PORTSMOUTH GROVE, R. I.,
Sept. 19, 1864.

DEAR SIR: * * * * In regard to your trusses which you left, I have applied several since you were here, and I must say that I am very much pleased with the

results obtained. I have not had trouble in any one case, though I have met with one case which puzzled me a little at first. I am perfectly charmed with the instrument, as well as with your other mechanical appliances, and think when I return to private practice, I shall have frequent occasion for ordering them from you. I think we shall before long need a new supply of your instruments at the hospital. They please the surgeons who have examined them and tested their merits.

Yours very truly,

JOS. W. CUSHING,

A. A. Surg. U. S. A.

Dr. E. P. BANNING,

270 Livingston street,

Brooklyn, N. Y.

DR. CUSHING'S SECOND REPORT.

“LOVELL” GENERAL HOSPITAL, U. S. A.,

PORTSMOUTH GROVE, R. I.,

January 31, 1865.

During the four months in which I have been detailed to apply Dr. Banning's apparatus in this hospital, I have applied about thirty-six for inguinal, single and double, direct and indirect, and ventral hernia, and for prolapsus ani, and in every case with entire success. Some have been sent to the field, having the hernial apparatus applied.

In only one instance has any instrument been broken, and this was easily and quickly repaired by the farrier at the hospital.

In all of its indications, in my opinion, it excels all other apparatus for the relief or cure of hernia, and I see no reason why the different apparatus should not become universally adopted in civil and military practice, when the medical profession become acquainted with their use and application.

Jos. W. CUSHING,
A. A. Surgeon, U. S. Army.

DE CAMP HOSPITAL, Dec. 29, 1864.

E. P. BANNING:

DEAR SIR: You will excuse this intrusion, and allow me to congratulate you on the complete success of your valuable Truss, and of its introduction into government hospitals. Those that you have furnished this hospital have given good satisfaction. I hope you may extend their use in other departments.

Yours respectfully,

LEWIS GRAVES,
Act'g Asst. Surg., U. S. A.

CONF U. S. GENERAL HOSPITAL,
AUGUSTA, ME., Jan. 10, 1865.

I have the honor to report that there have been seventeen of the Banning Trusses applied to cases of prolapsus ani, hemorrhoids, and the varieties of hernia, and that every one of which are giving great satisfaction. I regard the introduction of Dr. Banning's Combination Trusses into the army as an era in hernial surgery, and cannot but believe that the government could do no wiser thing, in point of humanity, or in point of saving both money and men,

than to introduce them at once into every hospital, and to apply them *in the field*, on the instant of any lesion requiring them, provided a skilful surgeon adjusts them.

GEO. E. BRICKETT,

A. A. Surgeon, U. S. A.

How to Measure for the Brace Truss.

Take snugly, the number of inches around the hips, over the linen, about 2 inches below the tips of the "haunch or side bones," and about 2 inches above the pelvic, or "front cross bone."

How to Select a Truss from Measurement.

Size from $25\frac{1}{2}$ to 27 in., calls for truss, No. 4; do. from $27\frac{1}{2}$ to 29 in., calls for truss, No. 5; do. from $29\frac{1}{2}$ to 31 in., calls for truss, No. 6; do. from $31\frac{1}{2}$ to 33 in., calls for truss No. 7; do. from $33\frac{1}{2}$ to 35 in., calls for truss, No. 8; do. from 35 to $36\frac{1}{2}$ in., calls for truss, No. 9; do. from $36\frac{1}{2}$ to 38 in., calls for truss, No. 10; do. from $38\frac{1}{2}$ to 40 in., calls for truss, No. 11; do. from 40 to 42 in., calls for truss, No. 12; do. from 42 to 44 in., calls for truss, No. 13; do. from 44 to 46 in., calls for truss, No. 14.

Directions How to Adapt the Truss.

1st. Open the truss and fetch it around the body, shoving the hip-bows close down to the tip of the "haunch-bones," then lie down, draw up the feet, carefully return the rupture, and place the oblong truss balls, with their lower end close to, and above the cross-bone, and the outer convex side of it very close to the small hard ligament outside,

which can be found and felt by the finger. Then, with one hand, draw up the bowels well, whilst with the other you hold the ball from rising. This causes the bowels to lie *above* and *on top* of the truss ball (and not behind it, as in other trusses), thus forming a "dead lock," and making it impossible for the bowel to escape

How to Make Corrections.

I. If the truss is too large, make it smaller by setting back the lock screws one or two holes, keeping the abdominal plate always in the centre, by using the connecting loops and screws.

II. If the lower edge cuts or presses too hard, take a pliers and bend out the lower end of the connecting perpendicular springs.

III. If one or both truss balls do not sit low enough, let them down by means of the slide in the connecting perpendicular springs.

IV. If the truss balls press too hard, lighten the pressure by turning the set screw, which passes through the supporting shaft and the horn plate.

V. If you wish the ball's pressure to be deeper, then turn the set screw which passes into the truss ball and it will sink in accordingly.

VI. Do the truss balls not sit out far enough to fit closely to the small hard ligament at each side, then separate them by means of the slides in their supporting shafts on the horn plate.

VII. Do the balls act too much *upwards*, and let the rupture down below them (as in the case of very lean people), then turn the ball out by gently bending out the supporting shaft close to the ball.

VIII. If the ball presses *more* at one end than the other, make it press *equally*, by twisting its supporting shaft to suit.

IX. Wear it not too tight, nor too long, at one time; and, if necessary, place something soft under it for a short time. It may be worn over the linen, which should be a little raised, to prevent its dragging the truss up in the body's motions.

The truss for piles, ruptures of the navel or thigh, may be regulated at each point with a pliers and screw-driver, by the aid of a little practical common sense.

Retail Price of the Truss.

For Single Rupture.....	\$20 00
“ Double “	25 00
“ Best Pile Brace.....	25 00
“ Ordinary Spinal Truss.....	20 00

Price of Spinal Lever and Prop depends upon its complications.

Sent to order on receipt of remittance.

The medical profession and surgeons in charge are invited to correspond relative to supplies.

Address,

E. P. BANNING, M. D.,

In charge of the Department of Hernia
in the Department of the East,

No. 22 Bond street, New York City.

The Banning Prolapsus Ani and Pile Truss

Is immediately and permanently effective, through its combined bearings—

1st. By protecting the lower colon and its blood-vessels from all pressure upon them by the bowels.

2d. By exerting a gentle spring pressure or support upon the anus, after the protruding parts have been returned.

The Banning Uterine Balance

Instantaneously corrects and gives permanent relief from prolapsus of the *Bladder*; Lateral obliquity, Retroversion or Anti-version of the Uterus, without any distension of the Vagina, irritation of the Uterus, inconvenience to the wearer, or any liability to displacement; and, after its proper adaptation, is perfectly manageable by the patient herself.

Medical gentlemen are invited to confide to Dr. B. the management of the mechanical department of such of their cases as they find difficulty in permanently and fully relieving.

The Banning Varicocele Truss

Gives immediate and permanent relief in varicocele, by efficient abdominal support, and graduated support to the spermatic veins over the pubis, thereby sustaining the weight of the column of venous blood.

Its use would preserve thousands of soldiers to the ranks.

22 BOND STREET, *New York City*.

New Orleans, March 8th, 1850

Dr. Banning,

Dear Sir,

As you have delivered a Course of Lectures in this City, which have proved highly instructive to those who have had the pleasure of hearing them, and as we have read with deep interest your valuable work upon Chronic Diseases (an enlarged edition of which, we understand, you are about to publish)—on behalf of those Ladies of New Orleans who have thus been placed under obligations to you, we desire to present you a testimonial of our just appreciation of your science, skill, and benevolence, and therefore ask you to accept the accompanying engraving, which, it is hoped, will prove a suitable frontispiece to your forthcoming work.

With assurances of our best wishes for your welfare, we are,


Most truly yours,

Mrs. _____	Mrs. _____	Com
" _____	" _____	
" _____	" _____	
" _____	" _____	
" _____	" _____	
" _____	" _____	
Mrs. _____		

*Extract of a Letter to the Author, from DR. PORTER,
of Bowling Green, Ky.*

“ For a very long time, or rather since the laws and structure of the human system have been well understood, medical men have acknowledged the want of some mechanical agent to act precisely upon the principle of your Brace; but the difficulty has been to construct the proper instrument. Many efforts have been made to supply this want, but without success, until the discovery of your ingenious contrivance; in which the medical profession, as far as I can learn, feel satisfied that we have the ultimatum of mechanical aid, to meet the indications of a large class of painful affections.

“ DANIEL PORTER, M. D.”

 See other evidences of Professional confidence and regard, pages 75 to 79.

PREFACE.

THE leading object of this work is sufficiently indicated by the accompanying brief expression of professional confidence and regard, namely—

“The undersigned have examined DR. BANNING’s novel views on the mechanical pathology of many affections of the viscera, and believe them to be highly interesting and worthy the serious attention of the Medical Profession.

VALENTINE MOTT,

HUGH M’LEAN,

ALEXANDER B. WHITING,

J. KEARNY RODGERS,

STEPHEN R. KIRBY,

STEPHEN BROWN.”

Subsequent researches and observations have induced the author to submit his sentiments in the present convenient form.

He is also persuaded, that the views thus frankly commended to the consideration of the Profession, will be found as rational as they are “novel,” and, inasmuch as they are based upon several simple propositions, they cannot fail to be easily understood.

The appearance in this work, of the engraving which forms the frontispiece, is sufficiently explained by the letter which accompanies the same. The author regrets

his inability to fill the blanks in this letter with the names of those ladies whose signatures are attached to the original, which is still in his possession; but as this liberty was not expressed or implied, of course he cannot, with propriety, lay them before the public.

The present edition of this work has been materially improved by a careful revision, and the introduction of matter entirely new. Indeed, considering the low price at which the work is sold, the reader will at once perceive, that much, every way, has been done for his profit and pleasure.

It is a most refreshing consideration that the growing interest in the Mechanical Pathology and Treatment of Chronic Diseases should have carried this work through no less than thirteen editions, with scarcely an effort to attract the attention of the public.

Another favorable consideration, connected with the subjects herein treated, though, confessedly, not of such a refreshing character, is the extent to which our views have been *appropriated* by different writers; an amusing instance of which appeared in a recent number of the *Boston Medical Journal*. We allude to an elaborate article on the evil tendencies of female attire, in which a correspondent took the pains to say, that he was not aware that the views he had advanced respecting the *mechanical descent of the viscera by ligature compression*, had ever before been advanced by any other writer; whereas the first edition of this work, which was published as long ago as the year 1841, contains *every idea* that he has put forth; so that, as matter of general information, it may be proper to add, that all works published since the above date,

which contain the fundamental principles of this book, should be held accountable, in a *moral* point of view, for not making some modest allusion to the *preceding* publication of our unpretending views.

We now have entire confidence that *Medico-Mechanology* will soon constitute a distinct department in the healing art, and that it will ultimately make up a large share of the teaching from the Chair of the Professor.

We desire, in conclusion, to express our obligations to many distinguished physicians and surgeons, some of whose names appear in this work, for their kind examination and approval of the subjects herein treated.

That abler pens may take up the subject, and give order and symmetry to what has been so rudely commenced, is the humble prayer of

THE AUTHOR.

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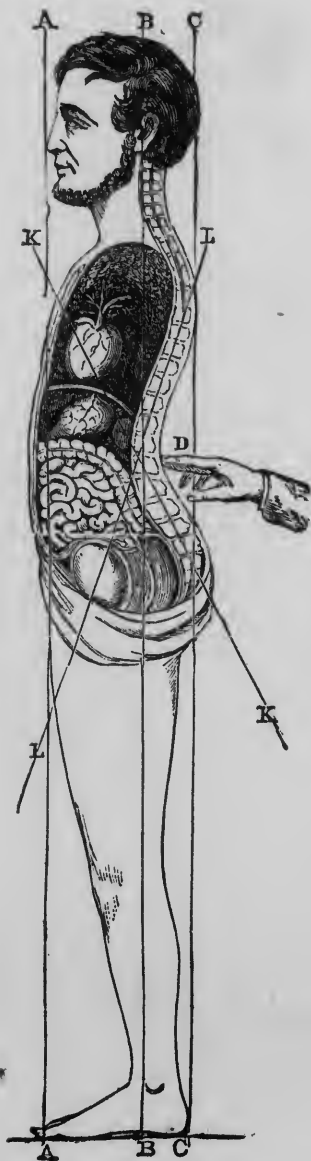
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The well-developed, symmetrical and healthy form.



PART I.

MECHANICAL RELATIONS OF THE TRUNCAL ORGANS.



As a preparatory step in the treatment of this subject, the reader is directed to the following propositions:—

1. The viscera, as well as the muscles and joints, are under the law of primary position and definite bearing.

2. They are designed to be *supported* from below upward by the abdominal and dorsal muscles; and not *suspended* by the visceral ligaments.

3. The erect posture, as represented by the mathematical lines in figure 1, is essential to the due exercise of the above named supporting power, in order to preserve the upward bearing and well packed condition of the mass.

4. The viscera being subject to the law of gravitation, every degree of morbid relaxation of muscular power, will be followed by a corresponding descent or displacement of the entire chain of internal organs.

5. This physical change of the system, from the upright to the drooping posture, as exhibited by the oblique and perpendicular lines in figure 2, mechanically induces an extended class of chronic maladies, such as consumption and other pulmonary complaints, bronchitis, dyspepsia, diseases of the heart, general debility, melancholia, hypochondria, spinal derangements and other deformities of body, chronic diarrhœa, hemorrhoids, constipation, the several varieties of hernia, prolapsus uteri, prolapsus ani, and the entire group of symptoms known as female weaknesses.

6. Diseases arising from a mechanical displacement or derangement of the viscera, and not from a diseased condition of the organs themselves, are not cognizant of medicine, and can only be eradicated by such mechanical support, as shall be physiologically adapted to the muscular forces of the system.

In placing *consumption* in the above category, we are not unmindful of the natural effect of such an announcement, in consequence of the wide-spread use of injurious nostrums for the relief and cure of this alarming disease. But, the line of our duty being obvious, we deem it only necessary to remark, that the term consumption is very often erroneously used to express symptoms which, in their incipient state, are undeserving this formidable name, the causes thereof being easily explained and removed, as will be abundantly shown in the pages of this book.

It will be seen by the above positions that our views of mechanical pathology, are indeed very simple; but perhaps this may be taken as an indication, that they are destined to outlive all unfriendly criticism; for, it is singularly true, that discoveries in medical science tend to sweep away the mists of complex theories and hypotheses, showing that while the phenomena of life are complicated, the laws which govern the same are few and comprehensive.

Once the muscular system, by which all the movements of the body are made regular and efficient, was not at all understood, and the wisest of the faculty supposed that blood flowed through the system like water through a sponge. The function of assimilation, by which the food is turned to blood and flesh, was not imagined, and many other things were seemingly chaotic, which are now perceived by every common understanding, as so many beautiful and orderly arrangements of nature.

Scrofula, in its various forms, was very recently believed to be positively incurable as a constitutional disease.

A A, Perpendicular front line, showing that the end of the big toe, pubes, and tip of the nose, are always about in line when the body is erect. B B, Middle line, passing through the spinal marrow at the nape of the neck and at D, and continuing its course through the hip, knee, and ankle joints; showing that these points are in line when the body is erect, that the head is exactly over the ankle, and that D is the body's center of gravity. C C, Posterior line, showing that the back of the head, shoulders, hip, and heel, are also about in

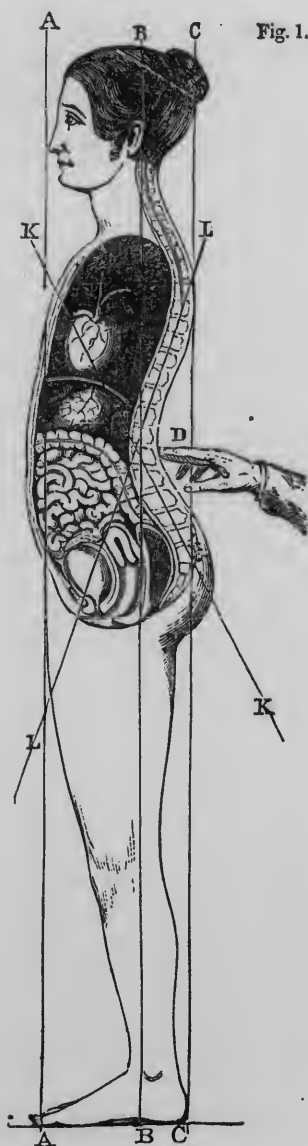
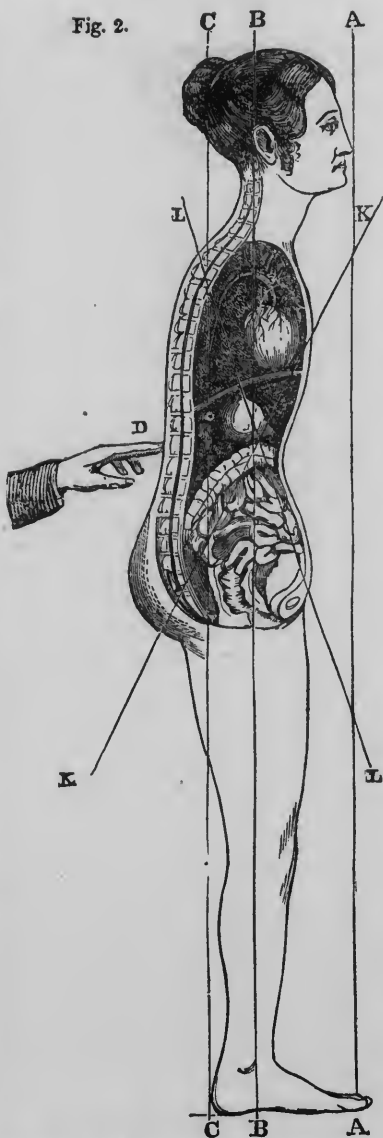


Fig. 1.

line, and that when the body is balanced, as it always should be, upon its center of gravity, the hollow of the back at D is much in advance of this line. K K and L L, Lines running in the exact direction of the advancing and retreating directions of the Spine, crossing each other and B B at D, and proving mathematically that D, in the hollow of the back, is the body's center of gravity.

FIG. 1.—Side view of the Erect Posture, with natural upward and inward bearing of the internal organs.

This figure shows that the end of the big toe and the tip of the nose are always in line; even when the hollow of the back has receded from the axial or middle line, quite beyond the posterior line and behind the shoulders; that drooping and round shoulders are produced by an antecedent retreating motion at the small of the back, (for, it must be plain, that if such were not the fact, the perpendicular lines, in both the erect and drooping figures, would not touch the head and feet at precisely the same points,)



and, that therefore, no style of artificial support, designed for straightening the human form, can ever accomplish its object, unless it be so constructed as to push forward the receded point, in the hollow of the back at D, and bring it again in contact with the axial line, under the center of the head.—(See Fig. 1. Page 17.)

FIG. 2.—Side view of the Drooping Posture, with internal organs suspended and compressed.

Once, diseases of the liver, and many others, which are now managed successfully, were viewed in the same light. Reasoning *à priori*, then, we have a right to conclude, and we verily believe that in time, there will be found an antidote and a remedy for every disease; or rather, perhaps we should say, that if the whole human race would respect the laws of organic life, each son of Adam might live out his appointed time, and "come to the grave like a shock of corn that is fully ripe."

Physiologists have long been employed in speculations on the vital principle, in order to discover a rational hypothesis for the phenomena of Consumption; and thence have sprang as many theories of its cause and nature, as there are thinking minds in the profession.

It is a sad fact, that hitherto there has been no satisfactory elucidation of the nature of fatal diseases of the trunk; and as every variety of internal treatment has been completely foiled, the prospect of curatives, on the old doctrines, is certainly a gloomy one! Is it not time to turn from this view of the vital principle of man, as being the seat of this class of diseases, to his *frame*, in order to ascertain whether *it* may not be primarily concerned in their production? We think that it is; and we hope to make it obvious to all, that the common causes of consumption and other chronic diseases, may be found in some mechanical derangement of the physical organization.

The contents of the trunkal cavities have hitherto been strangely examined in their local and isolated condition, as so many boxes of merchandise, first one, then the other, without reference to their relation to each other, as a material mass; whereas it is obvious that an adequate knowledge of the trunkal organs cannot be obtained by such an examination. The contents of the chest, for instance, cannot be understood without an accurate knowledge of the internal arrangement of the abdomen and pelvis; for if a change take place in the organs of the abdomen or pelvis

there must be a corresponding change in the mechanical relations of the pectoral organs ; and if these extended and combined relations of parts are not perceived, effects will be mistaken for causes, and symptoms for diseases, the seat of the malady being naturally looked for, at or near the locality of the morbid development, while the primary cause may be very remote, and so trivial as almost to elude research, as for instance, in cases of hysteria, hypochondria, dyspepsia, and prolapsus uteri. *The trunkal organs must be viewed together, as forming one complicated but regular machine, developing both mechanical and vital phenomena.*

This position may be strengthened and illustrated by referring to the mechanical arrangements of two nicely adjusted instruments, the lever watch and the locomotive.

The watch is a complicated and beautiful combination of many parts ; its appearance and regularity exhibit design, and this design is to secure a correct index of time. The two extreme points in this machine are the main-spring and the hair-spring. The effect of the elasticity of the main-spring is felt by each successive wheel, until it reaches the hair-spring and balance-wheel, causing a specific action, which is the direct result of the specific mechanism. If any one of the smallest parts of the watch change its relation, the primary design of the instrument will fail of accomplishment, and its action either be destroyed or materially modified ; yet the moving power is not at fault ; only one part of the well-adjusted mechanism fails to discharge its reciprocal office, and the whole is deranged.

We find also in the case of the *locomotive*, a specific design in its whole complex arrangement, which is attained only by the complete development and perfect action of all the parts. Should there be even a very slight derangement in the mutual bearings of the mechanism, imperfections in the combination will be the inevitable result.

Thus it appears that in the inanimate machine, it is the due and primitive relation of parts, and the action of mat-

ter and power upon this relation, that secures its specific action. So in the human machine, a certain relative position of parts is designed, the arrangement being mechanical, and therefore under mechanical law. The one is indeed made by finite hands, and is propelled and perpetuated by secondary causes, whilst the other is made by the Eternal hand, in infinite wisdom, being kept in existence by an unseen power; yet, notwithstanding this difference in the operative agents, the composition and arrangement of the machines bring them, alike, in bondage to the laws controlling mechanism and matter. And, just in proportion as the human machine is understood, will it be observed that it is governed and propelled by the same combined mechanical powers and philosophical laws that control other similar arrangements, and give order to their operations. But if in either machine, only one organ or part change its place, it will break the primitive and reciprocal arrangement, the mechanical relation will be lost, and there will be a derangement of the vital or operative power, arising from a mechanical cause.

Now, when there are derangements in the operations of machinery, the mechanical defect is always corrected without reference to the operative power. The engineer does not stop to inquire whether there is a deficiency or excess of steam, or whether the steam is of a vitiated character. But he promptly examines the mechanism, and removes the imperfection in strict conformity with the dictates of mechanical law.

All maladies, therefore, produced in the human system by any derangement of its organization, must be remedied by such mechanical force, as may be necessary to replace and retain the parts in their primitive relation, the human machinery requiring to be replaced as well as that of any other machine. Of course, then, in our present effort to exhibit the simplest and most efficient method of removing and eradicating the varied forms of chronic disease, we

shall bear in mind that it is not the steam, but the disturbed or broken engine that is at fault. In the first place, then, let us glance at

THE HUMAN TRUNK.

THE human trunk, though differing immeasurably from other traveling trunks, in that it is the perfection of creative power and mechanical skill, must, nevertheless, be treated in much the same manner, destined as it is to meet with hard jolts, and knocks, and falls, during the journey of life. Its contents, which are of priceless value, may be easily injured. If you would preserve them unharmed, the trunk should be well packed—filled to its utmost capacity. To effect this, you need only place it in an erect posture, with the chest expanded, the abdomen contracted, and the shoulders and neck holding up the head, as though they felt proud of it. You will then find the trunk well packed, and the abdominal muscles, like a great India-rubber apron, presiding in elastic dignity over the viscera, looking around in scornful triumph upon every trunk that has any “rooms to let.”

The trunk is dependent for its support and symmetry upon a hard and solid tissue, consisting of the spine, pelvic or hip-bones, sternum or breast-bone, and ribs, which, together with the soft parts proper, and other organs constituting its machinery, we now propose to examine, individually and collectively, in the same manner that we should proceed if we were inquiring into the mechanism, design, philosophy, and operations of any complicated machine.

THE SPINE.

THE spine may not inaptly be compared to a mast, supporting the sails and rigging of a ship, as it is the center-

post on which the body rests and turns, and upon which depends every position. Examining it philosophically, we discover many curious and important peculiarities, intimately connected with the harmonious development of the functions of different parts of the human frame.

An accurate understanding of the spine, in its combinations, is of great importance, touching the *rationale* of incipient and confirmed spinal affections, as it will enable us to construct and apply physical instrumentalities for the relief and cure of the same, that shall act, imitatively and concordantly, with the natural forces of the body. It will also enable us to see that most of the appliances now in general use for diseases of the spine and other chronic ailments, are based upon a wrong principle. We therefore invite particular attention to the action and bearings of this organ.

The spine consists of a series of thin, irregular, and similarly shaped bones, piled, as it were, one upon another, actual contact being prevented by means of flexible cartilage or gristle, insinuated between them, and aided by short, strong, and almost inelastic bands, called ligaments, which pass from one bone to another, snugly and firmly binding together the entire column.

The peculiarity of the construction of these bones, makes it evident that their motion is very limited, except at the neck and loins, the bodies of these latter, as well as the gristle between them, being thick, which, together with the fact that their bony arms stand off horizontally, indicates peculiar adaptation for *motion*; but not so with the bones between those localities: their bodies and intervening cartilages and ligaments are comparatively small and thin, their arms being longer and in closer contact; thus adapting this intermediate portion of the spine for *strength* rather than motion, a fact which might naturally be looked for, when it is considered that this pile of bones is so slim and high, that without some advantage in the peculiarity of its

construction, it would be unable to sustain the weight of the body.

It will be observed by a front view of the spine, that its bones are piled up, without bulging or leaning to either side, the pressure toward the center on both sides being equal; so that a plumb-line dropped from the center of the top of the spinal column, not only falls exactly between the feet, but keeps the center or medial line of the spine all the way. (See Fig. 3, p. 25.)

The side view of the spine presents a very different aspect. Instead of being perfectly straight, it has a complete serpentine form. Starting from the hips, it advances in a straight line, and, if continued, would come out at the top of the breast-bone. But, near the kidneys it turns, and runs backward as high as between the shoulders, quite far enough to throw the body out of line, did it not again change its course and travel forward in nearly the same direction as the other advancing plane. It soon assumes the perpendicular course, and terminates under the center of the head, which is beautifully balanced upon it in the axis of the body. (See Fig. 4, p. 26.)

Now, if we drop a plumb-line from the center of the head, we find that it passes through or touches the spine at the nape of the neck and in the hollow of the back, or pivot of motion; then through the hip, knee, and ankle joints, showing that the crown of the head, the nape of the neck, the center of the spine in the hollow of the back, and the hip, knee, and ankle joints must all be in line when the body is erect, or, rather, when it is balanced upon its center of gravity.

It appears, therefore, from a front view of the spine, that in its natural state, it has no lateral curvature, but exhibits an exact perpendicular line. It also appears that the curvatures visible on a *side* view of the spine, are designed to aid in the preservation of the erect posture; for, whilst the bend in the lower portion of the back throws

Fig. 3.

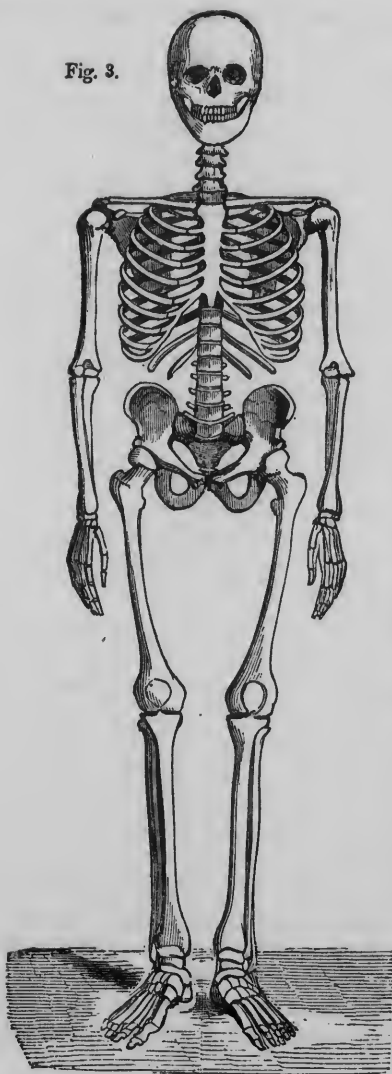


FIG. 3.—Front view of the erect and symmetrical skeleton, resting equally on both feet, and preserved from lateral curvature by the upper trunk being balanced on the spine.

Fig. 4.

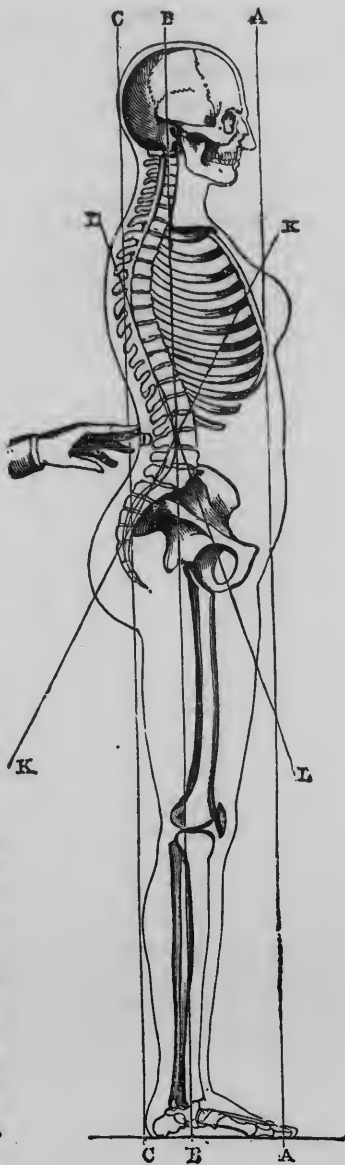


FIG. 4.—Side view of the skeleton spine, with mathematical diagram of the body's forces, showing the points which must be in line when the erect posture is maintained, and the shoulders well thrown back,—the weight of the whole upper trunk being concentrated in the Spine, exactly where the lines B B, K K, and L L cross each other.

the abdomen in front of the axis of the body, the inclination backwards, in the region of the chest, places an equal portion of the body behind its axis, the head being set upon the shoulders, and not upon the breast, the chest properly expanded, the heart and lungs well supported, the pit of the stomach elevated, the proper distance between the lower ribs and the hip bones preserved, and the muscles of the abdomen put upon the stretch. Thus also the abdominal organs are tightly grasped, and thrown more and more up and back into the center and axis of the body, being so lifted up that they cannot encroach upon the rectum, womb, or bladder; all of which is effected with but very little purchase or leverage on the spine. Indeed, so nicely is the whole mass adjusted, that the true dignity of the erect posture is maintained at pleasure, notwithstanding that, by the law of gravitation, the weight of the body is drawn towards the ground.

THE RIBS.

THE ribs are all connected at their posterior extremities, with the spinal column. Counting from the apex of the chest, the first seven ribs are united by their front extremities to the sternum, or breast-bone. These are called the true ribs. They are incapable of motion, except a slight twisting at their extremities, produced in the middle of the curve, by their elevation and depression. But, the front extremities of the next three, instead of being united to the breast bone, are united to each other by a strip of cartilage, which also connects them with the preceding ribs, by being fastened at its upper end to the lowest true rib. These are styled the false ribs; and it will be seen that they are essentially unlike the true ribs, being loose at their front extremities, where there is considerable intervening space, and having much room to play, while, at the same time, they have all the advantages of other ribs in

point of construction. The front points of the next, which are the two lowest, are not attached to the other ribs, or to each other, nor to the breast-bone, and on this account they are called the floating ribs.

Another important peculiarity of the ribs is, that their rear extremities are much higher than their front points, so that when we face the chest, and look directly across it, several of the lower ribs will appear to cross each other, as they run obliquely downward and forward. The peculiar adjustment of these curvatures is evidently designed to enlarge the lateral diameter of the chest, whenever the ribs are elevated by the proper power ; the descent toward their front extremities, being intended to facilitate the elevation of the whole chest.

Thus it appears, that the lower portion of the chest, and that only, is designed for the most extensive and perfect liberty of expansive motion. Even before inspiration has taken place, the inferior region, or lower part of a healthy chest, is the largest. Whatever, therefore, deranges the natural order of this mechanism, places a mechanical incumbrance on the vital functions of the delicate organs within the chest ; and whatever confines the lower portion of the chest, or deprives it of its natural liberty, compels undue effort in this region, until at length the natural action of the over-taxed organs gives place to the most painful chronic affections. In what light, then, shall we regard those who, well informed upon these points, still draw around themselves those suicidal cords, which tend to depopulate the world by filling it with degenerate wives and mothers, who only serve to perpetuate a puny, sickly, and short-lived posterity ! But the world is beginning to appreciate the influence of woman. Her religious, political, intellectual, moral, and social condition are daily and hourly discussed by the wise and gifted of either sex. Yet after all, sad will be the sequel, if her common sense shall fail her in her hour of greatest need, if she do not *realize* that her physical habits

have made her miserable and inefficient, and that, therefore, the foundation of her happiness and efficiency must be laid in physical reform.

THE STERNUM, OR BREAST-BONE.

THE sternum or breast-bone is situated at the front of the chest, and, while it strengthens the arch of the same, constitutes a firm bond of union for the true ribs, the front extremities of which are connected therewith. The breast bone, together with the ribs and spine, form the outline of the chest, the cavity of which is shaped like a cone, with its apex above; though, alas, nature is so perverted, that the base of the cone not unfrequently becomes the apex!

Having thus briefly noticed the construction of the spine, breast-bone, and ribs, we proceed to examine the soft parts adhering thereto.

THE INTERCOSTAL MUSCLES.

THE intercostal muscles occupy the spaces between the ribs, their extremities being firmly attached to the same. There are two sets of these organs, an inner and an outer one, which cross each other, and run in an oblique direction. They are analogous to the flesh of "*spare ribs*," a comparison familiar to all, but more appreciable, perhaps, to the minister of a country parish, who is often obliged to regard that portion of the animal as a striking symbol of the liberality of his flock. Their action is very limited, each muscle extending only from rib to rib. All the active power they have is contraction, or a shortening, of their dimensions; and this power they obtain from the influence of the nerves presiding over these organs, which nerves are almost exclusively under the control of the will. The curvature of the ribs being downward, of course the depressed condition of the curve is its natural and quiescent

state, so that the only possible motion of the ribs is the elevation of this curve. It will be observed that in this upward movement each upper rib is the fulcrum, or fixed point, drawing toward itself the next lower rib; and we submit, if the upper rib be the fulcrum at any time, it must be at all times, as the lower ribs are comparatively loose, being fastened, as before observed, only at their rear extremities, while the upper ones are fastened at both.

THE DIAPHRAGM.

THE diaphragm is the dividing medium between the contents of the chest and abdomen. Consisting principally of fleshy and muscular tissue, it arises from the lower edge of the short ribs; and, from this its fixed point of action, towards which its fibers are more or less drawn, it runs upward and inward, as high as the pit of the stomach, the two sides meeting and blending their fibers in mutual arrangement. The interior and upper extremity of this organ is attached to the breast-bone, the posterior to the spine, the intermediate portion being stretched across the chest, without any fixed point, excepting a thin partition which runs down the center of the chest, separating the right and left lobes of the lungs, that being its primary object. This membranous partition is attached or soldered, as it were, to the central portion of the diaphragm, where the two upper edges meet; and all that tends to support the diaphragm from central depression is this delicate and irritable substance. (See Fig. 5, p. 31.)

The two hemispheres of the diaphragm are exceedingly convex above and concave below. Indeed, the lateral inclination or convexity of this organ is well represented by the two halves of an excavated pumpkin, the upper edges being united, and the lower edges separated, each of the two under sides forming segments of a perfect dome. In this case the right and left central portion of the hemi-

Fig. 5

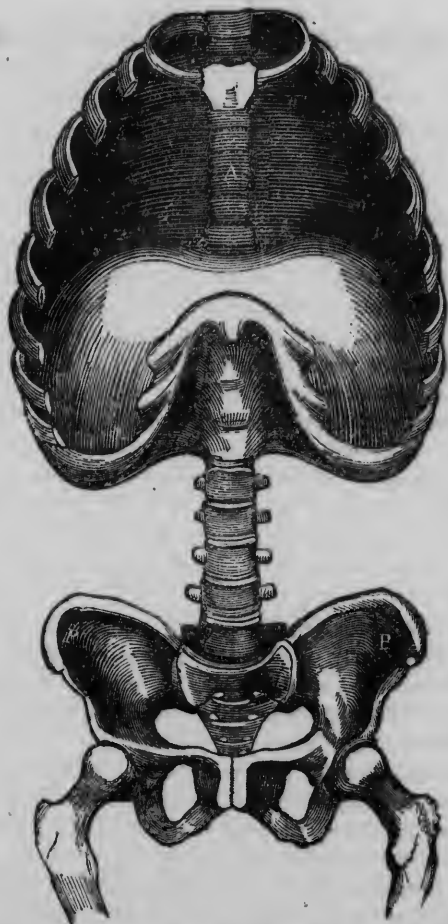


FIG. 5.—This figure shows the elevated and tense condition of the diaphragm; and also that the expansion of the base of the well developed chest, is much greater than that of the apex.

spheres, or, in other words, the center of their convexities, is higher than either the approximated edges or any other part, owing to their being pushed quite high into the chest; and this is its natural position, as indicated by cases of still-born children, or the sudden death of adults, wherein the diaphragm is always found sufficiently elevated to support the heart, and afford even a firm pressure to the collapsed lung which has never been expanded.

It cannot be, as some suppose, that the province of the diaphragm is to suspend the contents of the abdomen; for, being very thin, supple, and flabby, and wholly incompetent even to sustain itself in this peculiarly elevated state, it relies upon the visceral organs for its own support. But the visceral organs cannot furnish the aid required. They must in turn rely upon others; and so on, down through every link in the golden chain of support; for it is only when all the parts occupy their true relative position, so that the whole body rests with equal pressure upon its center of gravity, as in fig. 2, that any one link in that chain can reasonably look to the next for its due mechanical support.

Again: the lower edge of the diaphragm, being the fixed point, having a bony origin, and its upper angle but partially attached to a bony surface, its motion must be toward its lower angle, either by its own contraction or by the outward lateral motion of the ribs.

The natural situation of the diaphragm being very high, and its surface much extended, it occupies more space than is indicated by a straight line from its origin to its termination at the chest. In this elevated state its fibers cannot become shriveled and relaxed; for they are just sufficiently distended to stimulate them to contraction, upon the principle of resistance. Bear in mind then, that the diaphragm is kept in place by other powers than its own, and only active in contracting to its relative or abnormal position.

Now, as the surface of the well elevated diaphragm is

large, its fibers having a circular direction, and its lower edge being the fixed point, there being at the same time no active operation except by contraction, its specific movement on the contraction of its fibers, will of course be toward this fixed point; or in other words, the diaphragm will descend in its whole surface, and thus for the time being, enlarge the perpendicular dimensions of the chest, changing its natural relation to the heart and lungs.

THE HEART.

THIS organ is large and heavy. Its size and form are too well known to need description. It is the great agent for the circulation of the blood, and its state of alternate contraction and relaxation is continued with great regularity. Situated in the lower part of the chest, a little to the left of its medial line, and embraced by the lungs, the heart is inclosed in a sack, or thin membranous bag, which covers it loosely, and the lower part of which unites with the diaphragm so tightly, that the knife can scarcely separate them. It is retained in its reciprocal relations, first, by its own ligaments, and the vessels that receive and distribute the blood, which, although they appear to be designed rather to keep the heart steady, may be denominated suspensory powers; and, secondly, by the diaphragm, on which its large flat surface rests, and which prevents it from gravitating sufficiently to put its suspensory powers upon the stretch. Its specific action is derived from an exceedingly sensitive and irritable class of nerves, the least change in the normal relations of which produces morbid action.

THE LUNGS.

THE lungs fill up the remaining cavity of the chest. In the new-born infant they are small and heavy. After respiration, they become very light, the largest healthy

lung weighing, we believe, not more than six or seven ounces. They are situated, one on each side of the chest, and are divided into lobes, consisting of cells, the walls of which are so delicate that they are scarcely perceptible. These little cells present, in the aggregate, a vast amount of surface exposure; thus greatly facilitating the chemical process to which the blood is subjected, when it arrives at this locality, to be acted upon by the atmosphere; and as the purification of the blood is the most prominent function of the lungs, it becomes a matter of great importance that their whole capacity should be filled, at every inspiration, with the purest air.

The lungs are supposed to be the grand organs of respiration, which means inspiration and expiration, or "the breathing in and breathing out;" but, as they have no muscular tissue, and therefore no power of contraction or expansion, we are unable to discover the plausibility of any such view. The sensible and alternate changes which take place in the dimensions of these organs are produced in the one case, almost exclusively, by remote muscular power; and, in the other, by immediate and remote muscular power and atmospheric pressure. There is, doubtless, some elasticity in their texture; and it cannot be supposed that they do not perform an humble part in the process of respiration; but so little have they to do in this matter, that they cannot with propriety be termed even organs of *inspiration*, to say nothing about those of expiration, which are not to be found in this region of the trunk.

We shall endeavor to show, that neither the lungs, the ribs nor the diaphragm, can be viewed as the source of inspiratory power; nor shall we claim any such exclusive right for the intercostals, though obviously under the control of the will, and therefore possessed of the requisite power of contraction and expansion, those indispensable qualities for "leading off," in making room for a full inspiration by enlarging the capacity of the chest; but we

shall plead for the whole, as constituting what may be termed, *the inspiratory apparatus of the chest*.

The object, or perhaps it would be better to say, the effect of inspiration, is to inflate the little cells of which the lungs are composed. But how is this accomplished, seeing that the lungs fill the entire cavity of the chest, as well the moment after expiration, when the cells are compressed, as at the height of a full inspiration? To make room for the lungs to expand, it is necessary to increase the dimensions of the chest. But the lungs have no power to produce this change; neither have the ribs, though peculiarly adapted for motion; and the bones possess no power of contraction.

Now, if we look to the intercostal muscles, our inquiry will soon be at an end; for, agreeably to a law of the animal fibers, these muscles, at the moment of birth, instantly shorten or contract, pulling up the curvatures of the ribs, which by their consequent divergence on both sides, produce a vacuum to enlarge the chest in a lateral direction. As the result of this movement, the diaphragm then takes upon itself its specific action, shortening its fibers in every direction, and drawing down its convexity in a most philosophical and mechanical manner, thus creating a vacuum between itself and the lungs, for the enlargement of their perpendicular capacity. Simultaneously with the contraction of these organs, the principle of atmospheric pressure begins to act, the air rushing into the nostrils and mouth, and forcing itself into the closed cells of the lungs, which accordingly dilate to their utmost capacity, filling up, as fast as it is formed, the vacuum or space produced by the above muscular contraction.

Thus it appears that the lungs occupy quite a subordinate position among the organs of respiration, and that their agency in producing even a full *inspiration* is, in connection with that of the ribs, remarkably *passive*, whilst that of the intercostals and diaphragm is unquestionably *active*. And, now that *expiration* has become absolutely

necessary, by the impurity of the air in the lungs, we must find some power by which to expel the same; and as the lungs have no power of contraction, of course they would naturally look for assistance to some of their neighbors, probably those whose kind offices enabled them to receive the air, namely, the intercostal muscles. But here they can find no aid, notwithstanding it has been said that "one set of these muscles draws up the ribs, and that the other, running in an opposite direction, draws them down; for, both extremities of each set of muscles are fastened to the same ribs, and differ only in this, that they run in opposite directions. It must be evident, therefore, that in all cases, the successive upper ribs, being curved downward, will be the point of motion, and that this motion, beginning at the upper extremities of the muscles, will extend downward to the next rib, which will thus be drawn upward, both sets of muscles pulling with equal power in an upward direction.

But it is alleged that in inspiration, one set only contracts and elevates the ribs; and that in expiration the action is reversed, the other set contracting, and the lower ribs becoming the fixed point, drawing down the upper. This cannot be, as the contraction or shortening of the first set brings the ribs in closer proximity to each other; so that the other set, to say the least, must be contracted *passively*; and, if the specific action of muscles be the shortening of their fibers, these muscles, being already contracted, cannot pull down the ribs. To illustrate: suppose we take slips of India rubber, of equal length and strength, and attach them to two bodies of equal size, situated one above the other, the upper one being the most immovable, and the slips crossing each other, as in the case of the muscles in question. Now although these slips run in opposite directions, will not one set of slips exercise equal power with the other, in drawing the lower or loose body toward the more permanent and fixed point? And

will not the lower body move toward the upper in a direct line, notwithstanding the oblique direction of the lines pursued by the slips in crossing each other? We cannot assign to any one muscle the alternate power of pushing and pulling, or of pulling in diametrically opposite directions; nor can we discover any means, by which the intercostal muscles may pull down the ribs.

Some physiologists ascribe great expiratory power to the ribs, supposing that as in inspiration they are drawn up to an unnatural position, they will draw themselves back again to a natural state, and thus effect a compression of the lungs. It remains to be proved that this is true of the ribs; for, whilst their elasticity may be instrumental in effecting very moderate respiration, it could not, whether voluntary or involuntary, be held responsible for laughing and talking, crying, coughing, vomiting, hallooing, or blowing upon wind instruments. Besides, if the inherent, involuntary elasticity of the ribs or of other organs, be sufficient to produce these violent expulsive operations, we may be called upon to perform some of them continually, which to say the least, would be somewhat ludicrous.

The diaphragm comes next in the order of pursuit. It has been styled the great organ of expiration, being implicated in all sorts of violent vociferations. But it will be remembered that the diaphragm is so constructed, that a contraction of its fibers diminishes its surface, and lowers its natural convexity, or in other words, its natural function is to draw itself out of place. Of course, then, it has no active power but contraction, and the more it contracts, the lower will its convexity descend. If, then, the diaphragm possesses only the power of contraction, how can the same principle restore its convexity, after it has drawn itself into nearly a straight line, or in other words become responsible for its alternate rising and falling? Seeing, then, that the diaphragm has not, any more than the intercostals, both the

power to push and to pull, it cannot of itself exert any expiratory power.

Another theory of expiration is built upon the reciprocal action of the abdominal muscles and the diaphragm. It supposes that the air inhaled so crowds down the diaphragm, as to distend the abdominal muscles which, reacting, press back the abdominal organs, and that these again re-acting on the diaphragm, produce expiration. But here again we have no foundation. The same plea of inherent, involuntary elasticity is renewed, and it must be viewed in the same light as that of the lungs and ribs.

The *sterno-costalis* muscle, which arises from the inferior extremity of the breast-bone, and passes along the inside of the chest, up to the third and fourth ribs, into which it is inserted, possesses some degree of expiratory power, but being small, and running close to the ribs, it has very little leverage.

We have now examined every pectoral tissue, both soft and hard, and whilst we find in the chest a complete inspiratory apparatus, we are unable to discover therein the power of expiration or *voice*, which is but vocalized expiration. In other words, the power to expel the air from the lungs is not located within the chest.

As the power of expiration is identical with the *lifting* and *supporting* power, by which the internal organs are kept in place, and as we shall shortly be compelled to describe the expiratory organs, in speaking of the powers by which the internal organs, from the base to the apex of the trunk, are enabled to maintain their definite position and mutual bearings, we shall proceed with this inquiry, until the power of expiration is reached in its natural order.

THE RECTUM, AND URINARY BLADDER.

THE rectum is the lowest extremity, or the termination of the large intestine or bowel, being that portion of the same which passes through the pelvis. It follows the course of the sacrum, or rump-bone, being bound down to it by a slip of the lining membrane of the belly, and also by a texture called cellular tissue, which connects it loosely with the surrounding parts. The inner membrane of this bowel has a more extensive surface than the outer coat, and consequently lies in folds.

The urinary bladder is capable of holding from half a pint to a quart of fluid without much uneasiness. When empty, it lies nearly within the pelvic cavity, but when it rises up to accommodate itself in distension, it is found above the brim of the pelvis. It is retained in its place principally by cellular tissue, binding it to the under surface of the front bone of the pelvis.

THE UTERUS, OR WOMB.

THE uterus is a flat and hollow organ, of a pyriform shape, with its base turned upward. It is situated near the center of the pelvis, between the bladder and rectum. It is about one inch in thickness, two and a half in length, and weighs only two or three ounces; so that when put in contrast with its full expansion in a gravid state, it is surprisingly small. Nevertheless, it is well adapted for its important function; for, in addition to the significancy of the comparatively great thickness of its walls, its strong and multiplied supports are ten times greater than is required while it retains its state of natural muscular contraction. These supports may be thus briefly described:

1. The *vagina*, which is a curved canal, extending from the neck of the uterus to the outer surface of the body.

2. The *cellular tissue* which surrounds the organ, and separates it from the adjoining parts.

3. The *round* and *broad ligaments*, which consist principally of slips, or portions of the peritoneum, or lining membrane of the belly. The former, which are of considerable size and strength, arise from the sides of the womb and pass off to the right and left, ascending obliquely and traveling out of the wall of the abdomen, about two inches above the groins, to which they return, being finally inserted therein. The latter, which are the largest, arise from the upper and back part of the uterus, and are dispersed chiefly over the small of the back, into which they are inserted.

4. *A broad portion of the peritoneum*, which is reflected over the uterus, and which, re-ascending the sides of the abdomen, greatly assists in holding the uterus in its natural position.

Respecting the assertion so frequently made by various writers that "the round and broad ligaments do not support the uterus," we have only to say, that when we see a body suspended in space, and attached to several firm and fixed points by one or more ropes or tissues, our common sense tells us that they are all concerned in the support of that organ or body. We therefore conclude that *all* the uterine ligaments constantly assist in supporting the womb. But especially do we thus conclude, when we can discover no other important function for them to perform. And, if these ligaments were not designed to be the perpetual and proper supports of the uterus, why is it, as will shortly appear, that the descent of the uterus is generally attended with dragging pains in the groins where the *round ligaments* are inserted? And, why is it that this descent is also accompanied by dragging and grinding pains and weakness in the lumbar region, where the *broad ligaments* are dispersed?

THE STOMACH, LIVER, AND SPLEEN.

THESE organs are situated in the upper part of the abdomen, in the vicinity of the short ribs, where the chest is most movable and distensible.

The natural relation of these organs to the diaphragm is indicated by the fact, that they are always found in close contact with the same, the convexity of their upper surface being adapted for the purpose. From the under surface of the diaphragm, or rather from the peritoneum, with which it is lined, are thrown off ligaments to the organs over which it is thus spread, the principal use of these ligaments being, not to suspend the organs, however natural it may be to suppose that they are thus designed, but to steady and maintain them in their due position. Now when it is considered that the whole chain of the intestines, which is about six times the length of the human subject, is attached to the lower portion of these several organs, and that it is not the office of the ligaments connecting them with the diaphragm to hold them up, we are naturally anxious to know how they are kept in place.

It would not accord with the plan of this work, to enter into a minute description of all the attachments of the internal organs. Nor is this essential; for, after we have finished our present task of showing that they are all connected together, each having its determinate place or orbit, we are still in pursuit of the power which controls and lifts the entire mass of organs, throwing or inclining them upward and inward towards the body's center of gravity.

It has been said of the intestines, that their mobility indicates that they may undergo derangement with impunity, and that therefore they have no specific orbit. In support of this view, we have been referred to the protrusion of the bowel in cases of rupture. But it seems to us that this proves nothing of the kind; for, although ruptures may

not be attended with fatal results, they always produce the most distressing sensations. The simple fact of protrusion is but an illustration of the accommodating nature of the orbit or sphere of action in which the organs may respectively move, provided they do not draw *permanently* on the normal relations of each other.

The cavity of the abdomen is lined with a thin, shining, vascular and irritable membrane, called peritoneum. It is interesting to notice how this membrane throws a portion of itself into the center of the abdominal vault, like a shelf in the shape of a half moon, assisting in retaining that position of the visceral mass, which lies within its appropriate range of motion. It is also curious to observe its reflections from the back, over the intestines, coiling them up like a ruffle, and shortening their dimensions. But the attachment of these organs to the back is very loose and accommodating; whilst the *small*, and a considerable portion of the large intestines are below this half-moon shelf. It appears, therefore, that notwithstanding the natural attachments of the abdominal organs, their specific gravity perpetually tends to displace them, and to draw them out of their orbit, so that the entire mass is still left without support, even in the presence of the diaphragm.

This support might very naturally be looked for in the projecting hip bones, directly below the pendent organs; but, the lining membrane of the abdomen across this basin, dividing between the organs of the upper and lower cavity, happens to be the natural floor of the abdominal furniture; and as the back or rear surface of this floor, which is very smooth, is one or two inches higher than the front edge, forming an inclined plane, tipping forward and downward, of course, when the bowels fall or settle upon the same, they will not find a proper resting-place, but will roll towards the bone in front, and push against the abdominal walls. Again; such is the weight, number, and length of the pendent contents, that no support in the region of the

Fig. 6.

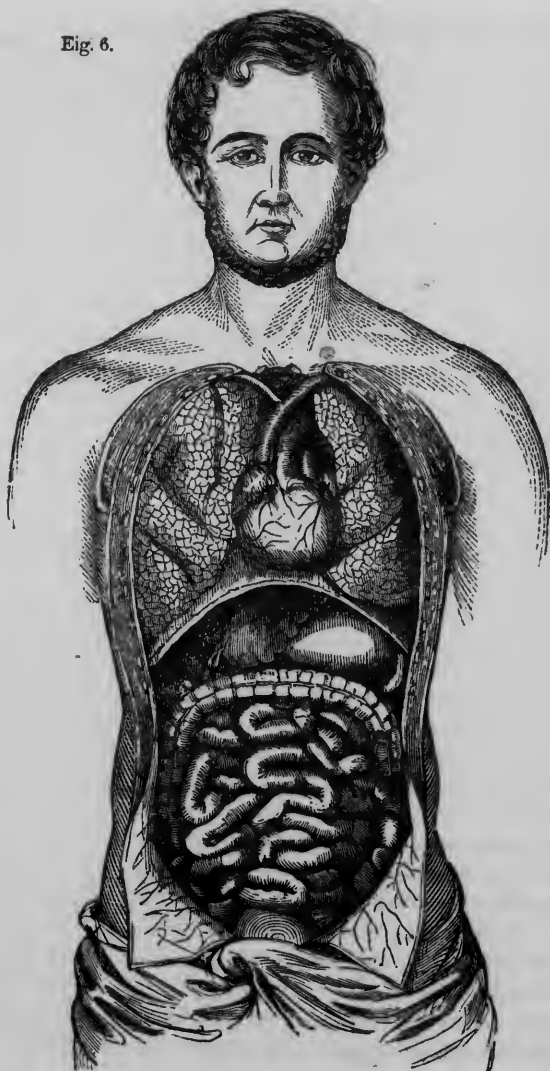


FIG. 6.—Front view of the bowels, supporting the heart and lungs, and protecting the pelvic organs.

pelvis would prevent an unnatural elongation of them, and a consequent dragging upon the diaphragm, especially when we consider the distance between this organ and the hips. But, even were the pelvis much nearer the diaphragm than it is, the size and mobility of the superincumbent mass, would alone be sufficient to produce a lateral displacement of the same, the dragging effect of which, upon the organs above, must be quite apparent. (See Fig. 6, p. 43.)

THE ABDOMINAL WALLS.

THE walls of the abdomen, unlike those of the chest and pelvis, consist almost entirely of fleshy tissue. Its cavity is the largest of the three, and contains the greatest number of organs, its vital walls serving as a limit or boundary to that locality of the body.

The contractility of texture, or the inherent or involuntary power to shorten or elongate, with which they are endowed, enables them to accommodate themselves to the varied conditions of the bowels. For instance:—If from disease or want of nourishment the cavity of the abdomen is diminished in size, these walls immediately shorten, and follow up the shrinking organs. Or, if the organs become unduly enlarged, the walls distend themselves; thus avoiding in the one case a sense of vacancy, emptiness and dragging, and in the other the most disagreeable compression.

Another property of these walls is, that they consist of a series of parts, or distinct organs, mechanically arranged, each attending to its own duties, whilst in their collective capacity, they have in charge the mass of organs over which they are spread. These parts are called muscles. They are distinct slips of flesh, of various but determinate sizes and shapes. We shall speak of their origin and insertion, only so far as is necessary for the elucidation of our subject.

THE TRANSVERSALIS MUSCLE.

As indicated by the name, this muscle runs in a transverse direction over the abdomen. It arises from the hip and back bones. A portion of it which runs upward in fibers, is inserted into the edge of the lower ribs; but the most of its fibers run in a circular direction around the body. The extremities of these fibers meet in the center of the point of the abdomen, where they unite, and by severe compression, form what is called the *linea alba* or white line. The lower and back part of this muscle being its fixed point, of course the pivot of motion is behind; and whatever action its fibers exert, the tendency will be to draw down the ribs and contract the chest. But as these elastic and contractible fibers run chiefly around the body, the principal action of the muscle will be to support the abdomen and diminish its size. So perfectly does it do this, it has been justly styled "the constrictor of the abdomen."

It is therefore manifest that great support is derived from the transversalis muscle. But still, acting in a posterior and backward direction, pressing nearly as much downward as upward, dragging somewhat upon the diaphragm, compressing and thereby mechanically displacing the womb, bladder, and rectum, it will be perceived that we are yet comparatively destitute of any *lifting* power. And, had this muscle ten times its present power, it would not be able to give the necessary upward direction to the organs within.

THE OBLIQUE MUSCLES.

THE organs to which we now invite attention, are the external and internal oblique muscles; the latter, extending from the hip or fan-bone and back, obliquely upward, are inserted into the lower ribs, most of its fibers

running into the white line at the foot of the abdomen, while the former, extending from the lower edge of the ribs, and also from the back, obliquely downward, are inserted into the white line and pelvic bone. Now, when these muscles are healthy, and exert only their native elasticity, they act like braces at each side to keep the backbone straight. And, when they unitedly act in shortening their dimensions, they tend to pull down the ribs and contract the chest, aiding both in expiration and in bending the body forward. If one set only contract, the body will be drawn sideways. In a supporting point of view, however, they act much like the transversalis muscle, having but a very slight tendency to elevate the abdominal mass.

THE RECTUS ABDOMINALIS MUSCLE.

THIS beautiful muscle arises from the front of the projecting bone at the base of the abdomen, and is shaped much like a suspender. It runs up the front of the abdomen, and is inserted into the lower extremity of the breast bone, at the pit of the stomach. It is divided into three parts, the upper, middle and lower, by a white, tendinous substance, which cannot contract.

This muscle can be made to contract in its whole length, or in either one of its divisions. Its action or power, which is confined to the front of the abdomen, is exerted in a perpendicular direction. When it contracts in its whole length it draws down the breast, compresses the abdomen throughout its course, and pulls the body forward. But, if the muscles of the back antagonize or draw the body in a contrary direction, the bending action will be neutralized and the body made more erect. Yet even then, this muscle has a very important and unequivocal influence upon the abdomen; for, when it contracts without bending the body, its action is directly upon the lower abdomen, so that whatever contractible power it does exert, is in an up

ward and backward direction. This muscle also exercises a powerful influence in elevating the abdominal organs, rolling them upward from the womb, large bowel, and bladder, and thus preventing serious injury in ordinary or accidental movements of the body.

THE PYRAMIDALIS MUSCLE.

THIS organ also arises from the projecting bone at the base of the abdomen, and runs up only about half way to the navel, where it terminates in a point. It resembles a pyramid in shape, and its use is to contract the abdomen. In conjunction with the preceding muscular organs, it flexibly and perpetually lifts up the whole truncal mass, rendering it portable and preserving its symmetry.

These muscles are justly styled organs of *expiration*, or voice; for, by pressing upon the lungs through the medium of the abdominal contents, which, as before observed, is the inevitable consequence of their *supporting* action, they mechanically expel the air. When this air is articulated or modified by the vocal organs on its passage through the vocal tube, it is denominated *voice*.

The influence of the abdominal muscles in the production of vocal sound, may be thus illustrated. Let any person stand at ease, and place his speaking organs in a passive state. Then with his hand, let him gently strike, or suddenly raise the abdomen, and a natural sound will be produced, corresponding with the position of the vocal tube and the articulation of the throat.

Respecting the *quality* of the sound thus produced, the following will suffice. Let any person stand erect, elevate the mouth, and, without any effort of the chest or throat, concentrate his will upon the abdominal muscles, causing them suddenly to contract, exploding or pronouncing at the same time, the sounds of the vowels; and then after making this experiment, let him relax the abdominal mus

cles and compress the chest. He will be surprised in the one case to find with what little effort he becomes master of a clear, smooth and loud voice ; whilst in the other he will be equally surprised at its harsh, husky and unpleasant tones.

It may be urged, however, in opposition to the view we have taken, that comparatively few people breathe or speak in the manner recommended by us, and that it can hardly be supposed that the majority have departed from the natural and true mode of breathing and speaking. But, not everything which is done, is well done, or even half done. We might also reply, that the majority of people do not breathe with *long and full inspirations*: but are they not afflicted with painful affections of the chest and throat, even from an early period of life ? And may we not add, that in a physical, as well as moral sense, "all have gone out of the way," and, "there is none that doeth good, no, not one" ?

THE PULMONARY CIRCULATION, AS CONNECTED WITH THE FUNCTION OF RESPIRATION.

DEEPLY sensible of the necessity for a wide-spread knowledge, respecting the pulmonary circulation as connected with the function of respiration, especially amongst invalids, yet fully persuaded that but very little is known by the popular mind concerning the same, we shall take a brief view of the subject, in the hope that it may not be unacceptable to the reader.

We proceed then, to remark that the *ventricle*, which is a strong muscular cavity in the left side of the heart, sends the blood, through the medium of the arteries, to all parts of the system, for its nourishment and warmth. The blood in its course, passes through the several organs of the body, each of which has a specific function to perform in the human economy. The liver, for instance, secretes bile ; the kidneys, urine ; the glands of the mouth, saliva ;

and so all in their turn receive their portion, and take different parts from the blood.

This is done while the blood is passing the capillaries, or the invisible vessels which constitute the connection between the arteries and the veins. This separation of different qualities of the blood by the different organs, is effected through the medium of the nerves of organic life, or the *insensible sensibility* of BICHAT. The blood, when it leaves the heart and enters these organs, is of a red or claret color, very warm, and loaded with elements for the sustenance of the whole body. But in its passage through the different parts of the system, the oxygen, which is the reddening and warming ingredient, together with the nutritious particles, are abstracted, leaving the temperature of the blood low, and its qualities impoverished. Furthermore, it has received a poisonous and chilling principle from the system, called carbon, which blackens it, and renders it unfit to nourish and sustain the body. Hence the reason why the blood in the arteries is red and warm, while the blood in the veins is black and not so warm; and hence, too, the necessity for the purification and re-enrichment of the blood to sustain the operations of the human system.

For the accomplishment of this object, the blood travels back through the veins, until it reaches a point in the right side of the heart. From thence it is thrown into another receptacle on the same side, whence it passes into certain vessels called pulmonary arteries, by which it is carried to the lungs, the numberless air-vessels or cells of which they are composed, then bringing it, by an exceedingly thin tissue, almost in contact with the air, which instantly takes up the carbon, and in exchange gives back the amount of oxygen required. The blood then returns to its starting point in the left side of the heart, whence it is again thrown into the system, in a proper condition to minister to its wants. This impoverishment and enrich-

ment of the blood is going on simultaneously in the well-balanced system.

The process and design of respiration, and the pulmonary circulation, being now apparent, the way is open to look at the laws that preside over these functions. This knowledge is highly important, as it will enable us to maintain them in their integrity, and restore them when they languish.

These vital and essential functions are under the influence and control of philosophical and mechanical laws, and these laws must be rigidly obeyed, in order to secure the accomplishment of the desired object. As we proceed we shall show, that the best regulated functions are the result of the peculiar and proper relation of all the parts.

The entrance of the blood into the lungs may be illustrated by referring to a piece of sponge. When we look at a fine, dry sponge, we see a small substance, quite compact, looking rather porous, though we can observe no tubes or holes passing through it. But when immersed in water, it enlarges and becomes full of tubes, some of them the size of a quill. Now, how has all this happened, seeing that these holes have not been made since its immersion? Why, evidently, the absorption of the water has separated the fibers of the sponge, and enlarged the whole mass. It will be seen, also, that the walls of the invisible pores are passively and mechanically drawn apart, materially increasing the diameter of the tubes. The general expansion has accomplished this in the most natural manner, and the contraction of the sponge effects the contraction of the tubes in the same manner. The expansion of any porous body enlarges the dimensions of the tubes, and gives them a corresponding receiving and conducting ability. And this ability is only a passive condition. It is not an inherent quality of the tubes. The application is obvious; for, at the birth of a child, the lungs are small, and comparatively heavy and compact, having no large cells or tubes, and no circulation but that which is designed

for nourishment, which is very inconsiderable. In this respect, the lungs are much like the dry sponge, the ribs being in close contact with them, through the pressure of the surrounding atmosphere. Previous to this, the infant's blood has been purified by its mother; but now that it is separated from its mother, removed into independent life, it must purify its own blood or die. But how can its life be prolonged when the walls of the arteries are collapsed, and there are no longer any tubes through which the air may freely pass, to produce the necessary change in the blood? The *sponge*, if we may so speak, is now dry, and its whole substance contracted. Nor can the tubes of the lungs be expanded by the power of the heart, because, by the influence of the atmospheric pressure, the diaphragm and ribs are continually pressed in upon the lungs, thus resisting the heart's contraction. We are thus shut up at the very outset, and the important process cannot even begin, for want of capacity in the arteries. The defect, we see, is *physical*, not vital, so that there must be a physical change before any advancement can be made. In other words, it is evident that the lungs must first be expanded before they can receive the blood. Inspiration, then, with all its necessary attendants, must begin to open the arteries for the admission of the blood. We see, then, that inspiration is the first act of independent life, and this failing, everything else must also fail.

When the child is born, if it be strong, it must breathe, and accordingly the machine is set in operation by the power of the Divine Architect. Simultaneously, then, with the drawing of the first breath, the intercostal muscles shorten themselves, thus drawing up the ribs, and expanding the chest; whilst the diaphragm shortens its fibers, and draws itself down, thus flattening its surface, and increasing the perpendicular dimensions of the chest.

At the instant that this vacuum occurs, the atmosphere rushes into the lungs, and fills up the cells, expanding them,

so that they compress the diaphragm and ribs as much as when collapsed. This is inspiration ; and it has effected the expansion of the lungs and the arteries, together with the required supply of air. Here we see the *wet sponge* and its tubes. An unobstructed entrance is now afforded for the blood, and an open passage through the lungs ; the cells are also spread out wide, exposing a large surface, and enabling the blood to flow directly up to the air, where it is purified, the capillary vessels being also enlarged to their utmost capacity, thus facilitating the passage of the blood through them into the veins.

The blood being now purified, it is necessary that it should pass along back to the heart for distribution, and make way for a succeeding quantity of impure blood, to undergo the same process, and so on, in one ceaseless round. Hence it appears, that provision must be made for the mechanical expulsion or exit of the blood, as well as for its mechanical entrance. But whilst the blood has become pure, the air within the lungs has been made impure. The lungs must, therefore, rid themselves of the same, and secure a proper supply of fresh air. To accomplish this, the intercostal muscles relax, and the ribs sink back once more to their normal position, and thus gently compress the lungs. The abdominal muscles also contract, raising and compressing the abdominal organs ; by which means the diaphragm is forced against the lungs, the whole substance of which is thereby compressed, the cells, arteries, and veins contracted, the air expelled, and the blood pressed back into the heart. Whatever, therefore, interferes with respiration, strikes at every other function ; so that, just in proportion as this is intercepted, will the whole system be injured ; and, whatever tends to diminish the calibre of the chest, especially at its most capacious and distensible part, destroys the influence of the intercostal muscles, compresses the lungs, prevents a fresh supply of air

in the same, and deprives them of their natural exercise, which is their stimulus to functional action.

Suppose, now, that the abdominal muscles are relaxed, the diaphragm inverted, the mediastinum made tense, the body drooped, the lower chest contracted and kept so by the weight of the body, the influence of the intercostal muscles destroyed, and inspiration carried on by the upper lungs and intercostals, thus interrupting or obstructing both respiration and the pulmonary circulation. What will be the symptoms? Why, the blood will flow imperfectly and slowly in the lungs, and, being in a poisonous condition, will heat and irritate the delicate tissue, create a sense of swelling and tightness, and a smothered heat, with shortness of breath. There will be but little air in the lungs. Of course, then, they will be poorly expanded, there being but a small surface of air cells to be presented to the blood for its purification by the atmosphere. The minute capillary vessels will thus be morbidly small, increasing the difficulty of circulation through them into the veins, occasioning a damming up, or engorgement in the lungs. This will induce intolerable tightness of breath, and a sense of fullness, as if breathing through a sieve or cloth. This stricture will be felt especially in the center of the breast, and as there will be but a partial compression of the lungs, for want of a full expiration, the blood will linger in the veins, and move tardily back to the heart, unprepared to subserve the wants of the system; the expansion will be near the throat, and the breathing will be increased in frequency, to make up for imperfection in its length or quantity; as the system must have about the same quantity of air to arterialize the blood. There will also be a sense of sinking at the stomach, which will be aggravated by the erect posture, from the dragging of the sunken organs below.

This state of the lungs would soon put an end to the life of the patient, did not nature come to the rescue, by so

creting a mucous expectoration, which she throws off by means of a cough, and thus oftentimes preserves life for years, under these morbid relations.

This compressed state of the lungs on the one hand, and congestion on the other, will frequently cause a rupture of the delicate vessels, and induce bleeding from the lungs.

The compression will, in the end, produce a total loss of expansion, and a collapse of the lower lobes of the lungs, so that the cool and reviving air can scarcely find its way to them. The result is, that the cells secrete a glutinous fluid, which fills them up; their walls finally adhere to each other, and soon become torpid and hard. New vessels begin to shoot out in consequence of the blood pent up in them, and we have now a hard, heavy, indurated mass. Inflammation sooner or later ensues, when we have matter, or tubercles, endangering the life of the patient.

Since it is requisite to engage all the combined influences above described, to secure an ample volume of lung and an ample size and play to the chest at its inferior region, what shall we say of the trade of the shoemaker, tailor and milliner? Although they are useful and honorable employments, their effects upon those of a slender and delicate make must be fatal. And this is confirmed by the sufferings of eight out of ten of those who labor in these trades. And what shall we say of the confinement of the drawing-room, and of the piano-forte, or of the stooping, mincing forms so much admired and encouraged in some of our *fashionable* schools?

PART II.

MECHANICAL PATHOLOGY AND TREATMENT OF CHRONIC MALADIES

HAVING concluded our brief description of the mechanical relations of the organs and cavities of the human trunk, and assumed that chronic diseases mechanically induced by a morbid relaxation of the abdominal and dorsal muscles, and consequent derangement of the viscera, *are not cognizant of medicine*, and cannot therefore be successfully treated without mechanical aid, the author now proceeds to demonstrate the correctness of the views advanced. This he purposes to do, after giving a description of his curative inventions. He will then show the morbid effects of relaxation upon the different organs, and upon the system generally, connecting therewith some remarks upon the nature of the maladies thus induced, and presenting, at the same time, a sufficient number of *cases* to satisfy the reader of the value of his series of mechanical devices for checking the progress, and eradicating the causes of chronic disease.

CURATIVE INVENTIONS FOR THE TREATMENT OF CHRONIC
DISEASES OF THE TRUNK.

THE great objection to the old style of mechanical supporters, is, that they weaken and restrain the growth of the suffering parts. They also produce excoriations on the

bony prominences over which they pass. Indeed, their pressure is everywhere and at all points. Besides, they have but two pads, and these are immovable. But their chief deficiency lies in their lack of *upward* support, the front pad being too large, and its outer and inner face perpendicular; by which means, the lower abdomen, instead of being raised, is absolutely confined more closely than ever, the pelvic viscera or lower organs being crowded downward and backward, producing sickness and a sense of *sinking* at the stomach. Some instruments consist of two pads, connected with straps. But these straps press too much on the upper, and not enough on the lower abdomen. Others, although they do lift upward, produce irritation for want of a flexible spring, or an arrangement by which the pads can be changed to relieve the parts. As spinal supporters and chest expanders, these articles have signally failed, having been constructed on the assumption that the causes of curvature of the spine and contraction of the chest, were to be found in the parts affected, whereas they are obviously remote. The principle of either pulling back, pressing in, or lifting up the shoulders without making a fulcrum of the hips or small of the back, however extensively it may be adopted, is most ruinous in its tendency, and it *must* follow, that whatever portion of the chest is thus used as a fulcrum for leverage upon some other portion of itself, will be necessarily compressed, the action of the ribs and shoulders restrained, and the well-balanced antagonism of the muscular shrouds and backstays of the spine, no longer maintained.

THE BODY-BRACE.

It will be seen by reference to the accompanying plate, that the mainspring of this instrument, which is composed of a metallic band, passes around the body, just below the ribs, and is so constructed as to form a bow upon each hip, its extremities or arms being formed into an unyield-

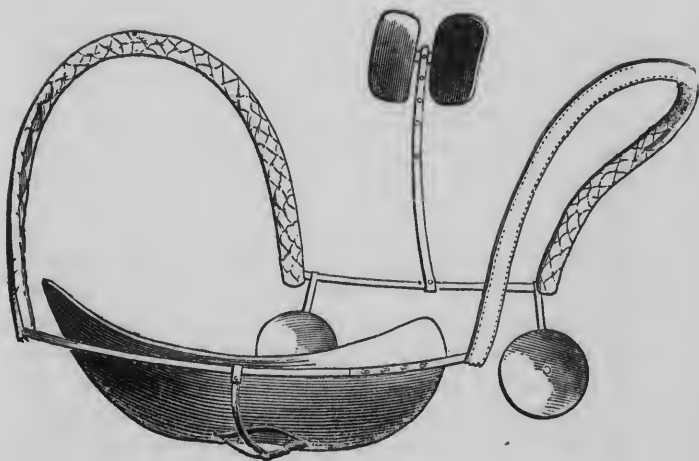


FIG. 7.—THE BODY-BRACE.

"Patients of my acquaintance who have labored under organic diseases for years, and on whom the whole catalogue of medicines has been exhausted, *without the least beneficial result*, have been, by the application of the Brace, restored to a comfortable state of health in a few weeks.

"I am prompted to write this from having recently visited my old country circuit, and seen some of my former patients, whom I could not cure, and whom I had given up as hopeless, so far, at least, as medicine was concerned, that are now entirely well, from the application and use of this truly valuable instrument.

PLINY POWER, M.D.

"Detroit, Mich."

ing look at the base of the abdomen. These ends may be unlocked at pleasure, and thrown backwards, so that the entire band shall form a flat horizontal strip, the flexibility of which permits it to return uninjured to its original shape.

At the top of the upright spring or post, will be seen a cross bar, sustaining two dorsal pads, gently pressing upon each side of the spine, with a feeling of support, like that of the human hand. The post or standard thus alluded to, is attached to the center of the rear horizontal of the mainspring, in such a way, that it may be pushed to the right or left, as may be required in cases of lateral curvature of the spine.

Here also, is the starting point of a pair of descending springs with pads, pressing upon the weak and relaxed hips in the same firm and gentle manner as the other two dorsal pads in the small of the back, and to the same end, namely, that of pushing the middle of the body under the shoulders, and into a straight line with the head and ankle joints.

From the *front* horizontal bar, which is a part of the mainspring, projects obliquely downward and inward, a short curved metallic spring, across which is affixed another spring, in the shape of an ellipse. A large front pad adapted to the form of the lower abdomen, is then attached by its outer surface to the opposite and inner side of the elliptical spring. By means of this peculiar arrangement and bearing of the curve and ellipse, the inner face of the abdominal pad is made to look *upward*, exactly in the direction of the fuleral pads.

This curved lever which throws inward the lower edge of the front pad, and thus produces the natural upward and outward action of the abdominal viscera, is only an inch and a half in length; whereas the front pad of all other supports, being attached directly to the long arch of the mainspring, the lever is from five to nine inches in length;

in which case the under edge of the pad can only travel upward by traversing the sweep of that long lever, the motion of which, on the body, must be very slight. The gentle yielding of the elliptic spring upon the abdominal pad, protects the body from the evil effects of all kinds of jolting, and even renders unnecessary the cushioning of the pads, which are accordingly made of horn or shell, and therefore always light, cool, and clean.

By referring to Figures 17 and 18, pages 160 and 168, it may be seen how snugly the brace sits upon the body. Observe particularly the position of the front pad. By virtue of the short curved spring its lower edge is pushed under the abdomen, and the upper edge turned outward, the pressure at the same time being made gentle and elastic by the action of the elliptical spring. The bearing of this peculiar combination at the base of the abdomen being directly upon the fulcral pads in the hollow of the spine, an upward, outward, rolling motion is produced, by which we are enabled to lift the abdominal contents, so that, through the natural medium of the viscera, the weight upon the vessels of the lower extremities, and upon the bladder, womb, and lower bowel is removed, the stomach, liver and spleen supported, and the chest made short and broad. In the mean time the bearing upon the fulcral pads in the hollow of the back, is continually prompting and aiding the individual to stand erect, the upright posture, as we have already shown, being absolutely essential to health. Indeed, it may be safely said, that inasmuch as muscular laxity and its chronic results, cannot exist without more or less deviation from physical uprightness, the brace may be laid aside as soon as this uprightness is regained. But as these chronic maladies requiring artificial support, *may* exist without deviation from the erect posture, the best and safest indication the patient can have, that the time for laying the instrument aside has arrived, is the removal of the malady.

But perhaps we shall be better understood about the

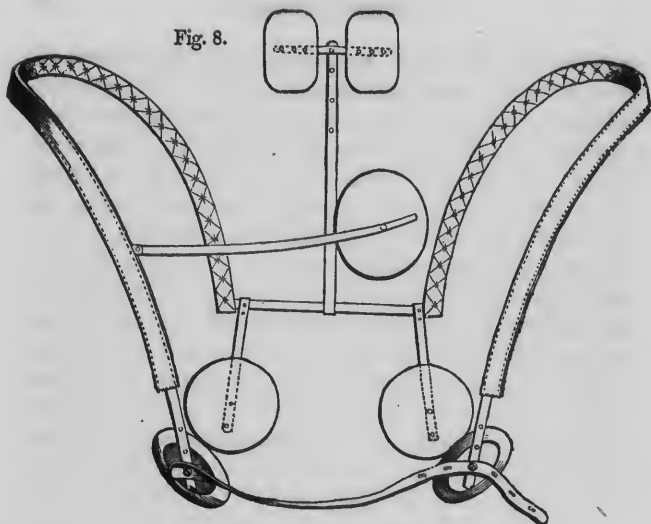


FIG. 8.—THE TRUSS BRACE.

For supporting a weak back, and curing Femoral, Inguinal and Ventral Hernia.

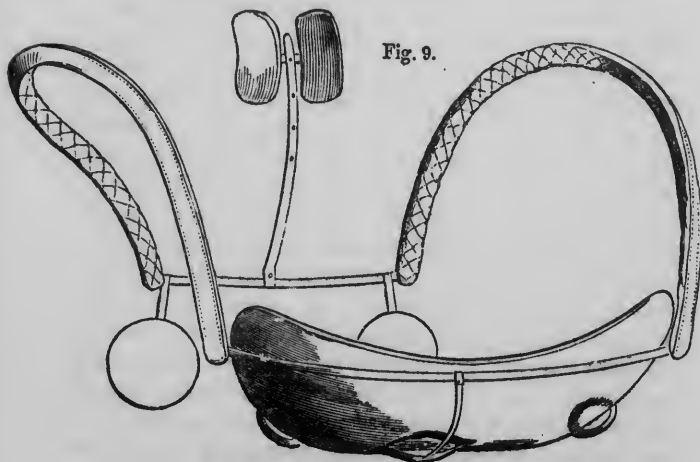


Fig. 9.

FIG. 9.—THE BODY BRACE-TRUSS.

Possessing the double properties of a Body-Brace, and an Inguinal Rupture-Truss.

action and bearing of the brace, by further remarking, that when the fulcral and forward power of the back pads, and the oblique lifting power of the front pad, meet each other at the posterior surface of the abdomen in the region of the kidneys, they instantly unite, and give an upward impulse towards the last dorsal vertebra at the neck, *just as the simple and compound forces of the tissues act in health*. It will be observed that by this means, the body, at the least expense of power, pressure and constraint, is erected and squared, the chest expanded, and all the proper upward mutual bearings of the viscera to themselves, and to their truncal walls, restored and preserved. It will also be seen that the action of this combination of parts, is in perfect contrast with the antero-posterior action of other supports.

THE TRUSS-BRACE.

THIS device is constructed like the Body-Brace, except that it has no front horizontal bar nor abdominal pad, its extremities descending like arms over the inguinal rings down to the pubes. The arrangement of the mainspring enables us to apply pads of proper substance and shape, to either Femoral, Inguinal, or Ventral hernia, or to *all at once*, and in such a way as to throw all the pressure required *directly* upon the several ruptures. (See Fig. 8, p. 60.)

Thus the *ventral* hernia, or rupture of the navel, is retained without encircling the abdomen, or pressing upon the spine, and therefore, without inducing, like all other appliances for this rupture, those ruinous and painful effects upon the viscera, such as prolapsus, leucorrhœa, constipation, &c. Thus, too, the *femoral* hernia, or rupture of the thigh, which has ever been difficult of permanent retainure, is just as easily and successfully resisted as *inguinal* hernia, or rupture of the groin, though protruding much lower

Fig. 10.

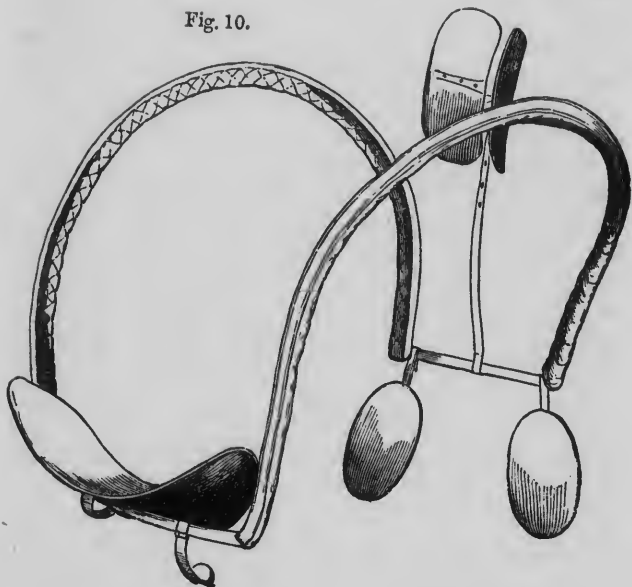


FIG. 10.—*View of Body Brace-Truss arranged for cure of Femoral Hernia.*

"Every kind of truss had been perseveringly tried, but without the slightest prospect of relief. After some conversation about the probable effect of our own appliance, the *Brace-Truss* was made to hold the rupture. Our highest expectations were more than realized, and the patient went on her way rejoicing."—(See *Effects of Rupture and Erace-Truss*, Case 1, p 233.)

than the same, the spring conveying the pads, in either case, being made to pass around the broad part of the hip, where the body is motionless.

It will be observed, that in contriving this Truss, we have arranged the *dorsal* pads the same as those of the Body-Brace, so that persons requiring a truss, may now enjoy that comfortable support to the back and hips which no other Rupture Truss has ever been able to impart.

But, inasmuch as a very large proportion of the cases of hernia are superinduced by general muscular laxity, and therefore require abdominal support, we have caused all the subsidiary springs and pads for the different forms of hernia, to be so arranged, that they may be transferred at any time to the mainspring of the Body-Brace. Another benefit to be derived from thus converting the Body-Brace into a TRUSS-BRACE is, that the patient has the alternative of attaching the pads for *inguinal* hernia *directly* to the inner surface of the *abdominal* pad, the retainure in such case, being the most perfect thing imaginable. (See Fig. 9, p. 60.)

THE SPINAL PROP.

THE *mainspring* of the Spinal Prop, is a thin metallic band, from an inch to an inch and a half in width, tastefully cushioned, and passing around the body. The upper and lower edges of this band are so arranged by opposing and peculiar curves, that in bringing it to a circle over the hips, it flares or flanges at all the different points, without bending or warping, and beautifully adapts its inner surface to the different planes and curves of the pelvis, the extremities being firmly united by a simple metallic loop-and-button lock. (See Fig. 11, p. 64.)

By thus converting the fat and muscles around the pelvis into a *natural* cushion, on which the whole broad surface of the band and its *artificial* cushion may rest, it will bear

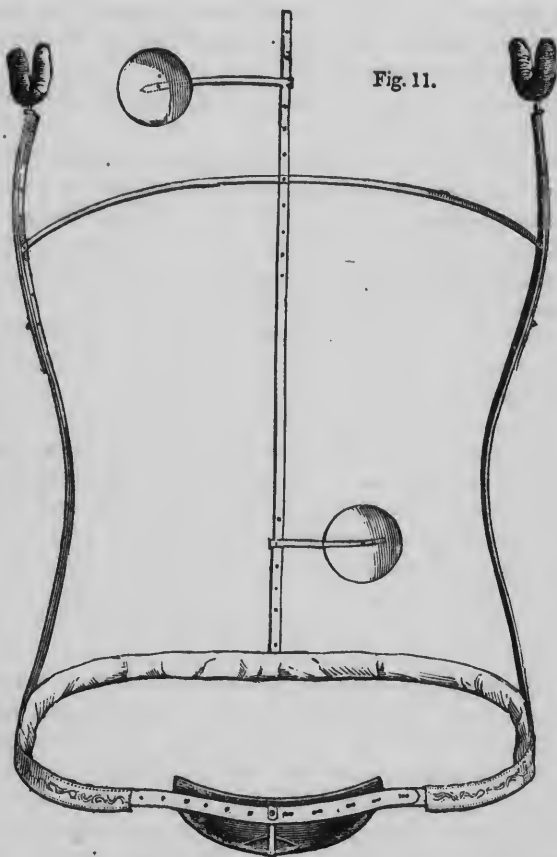


FIG. 11.—*The Spinal Prop, for weakness and deformity of the spine hips, and shoulders.*

any amount of weight. It is therefore used as a fulcrum for sustaining the whole weight of the upper trunk, in case of spinal deformity or great muscular debility, a result never before attained by any other contrivance, without pain to the wearer.

This mainspring constitutes of itself, a complete well-fitting and immovable guide and support, as well as a permanent and reliable basis for the attachment of subsidiary springs and pads; for, although different in shape and fitted for heavier burdens, it is constructed on the same principles as the mainspring of the Body-Brace.

In order to correct curvatures at different points of the spine, especially when the physical energies of the patient are much exhausted, an upright metallic spring or post is extended from the mainspring up the sides of the patient, so adjusted as to pass under the arm without confining the shoulders, by which means the weight of the upper part of the body is thrown upon a most reliable and agreeable prop, and the patient enabled to take such physical exercise as his medical adviser may from time to time suggest. Then, by extending another upright spring or shaft of equal length along the spine, and projecting from different points of the same, a horizontal arm with a pad thereon, to the left or right, as the case may require, we are enabled to support the whole chest, at the same time that we are correcting the varied distortions of the spine, hips and shoulders, and the consequent shortening and twisting of the body. If, however, the patient is not so debilitated as to require this crutch-like support, the upright standard or spinal post here spoken of may be attached to the Body-Brace.

THE PELVIC AND CHILD-BED GIRDLE.

THE peculiar shape of the Body-Brace was found to be ill-adapted for many cases of pregnancy. To meet this difficulty, we have constructed a broad hoop or girdle, well

Fig. 12.

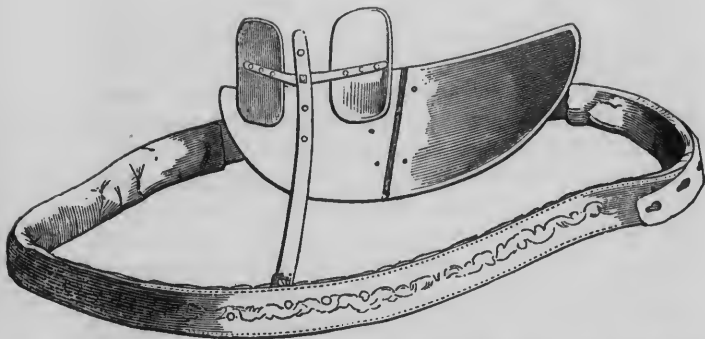


FIG. 12.—*View of the Pelvic and Child-Bed Girdle, for the support and comfort of Pregnant and Lying-in Women.*

*Now, we hold that almost every pang peculiar to the period of *pregnancy*, is mechanically induced by distension, weight, and pressure, and that, therefore, instead of depending as hitherto upon cathartics, the lancet and paregoric, for temporary relief, these distressing complaints, which have rendered this portion of female life a terror, may be entirely removed by such judicious mechanical support, as the girdle in question is every way fitted to impart."—(See p. 172.)

"There can be no doubt that three-fourths of the difficulties attending, or resulting from the *puerperal or child-bed state*, arise from inattention to the condition of the viscera, the *mechanical* relations of the same being materially changed by the sudden birth of the child."—(See p. 176.)

cushioned and locked in front, like the Brace, fitting closely to the body, several inches below the tips of the hip bones. For a correct appreciation of the construction of this beautiful device, the reader is referred to our description of the *mainspring* of the Spinal Prop in the preceding article, such mainspring and the pelvic girdle, being *identical*. (See also Fig. 12, p. 66.) Its supporting and comforting power is surprisingly great, as the description to which we have just referred will plainly attest. The reader will bear in mind, that if required, all the subsidiary springs and pads of the Body-Brace may be attached to the Girdle.

Our theory of Mechanical Support nowhere applies with more salutary effect, than in those varied exigencies of matrimonial life, for which this instrument was specially designed. Instances are constantly occurring where the most inconvenient and painful weaknesses are experienced, which, at times, are described as "*a sense of coming apart of the hips*." But more especially after child-birth, and as the natural effect of the same, is this the case, when ordinary weakness and lassitude are succeeded by severe debility and suffering, and long confinement. For all such persons, this girdle, with or without the Brace-pads, is most comforting and effective, as it binds together the shattered form, and entirely removes those tormenting sensations, so patiently endured by the mothers and daughters of the race, *simply because they are ignorant of this invaluable mode of relief*. And, when it is considered how suddenly after child-birth the well-packed internal parts are exchanged for a loose, rolling, hanging state, and the tense condition of the surrounding muscles for one of exhaustion and collapse, we can only wonder that woman has been so long neglected, and that it should be *our* privilege to tender her an abundant security against the terrible effects which are steadily flowing from these changes of the system.

THE GALVANIC, AND ELECTRO-MAGNETIC ATTACHMENTS.

THESE attachments may be appended at pleasure to the author's various Braces and Supports. They are so arranged that the galvanic influence can be brought to bear upon any part of the trunk, *without increasing the bulk of the instruments*, or causing any inconvenience to the patient. Millions of dollars have been wasted in fruitless applications of galvanic and electric belts and rings, for the relief of maladies having their origin in mechanical disability. Temporary relief, indeed, has often been the result of such applications; but surely they could never be expected to eradicate disease *mechanically* induced. It therefore occurred to the author, that, by judiciously uniting so powerful an agent as galvanism, or electro-magnetism, with mechanical support, he would be better able to control and remove some of the more complicated forms of disease.

THE PERINEUM, PILES, AND PROLAPSUS ANI BRACE.

THIS important Spring, as indicated above, is adapted for the relief of piles, prolapsus ani, seminal or genital weakness, and weakness of the perineum. Semicircular in form, with a properly-shaped porcelain pad at the lower end, a loop at the upper, and designed for either of the instruments we have described, it is slipped on to the upright post which holds the dorsal pads; or, it may be attached to the front horizontal bar of all the instruments except the Rupture Truss, which is constructed without any such bar. (See Figure 13, p. 69.) The convexity of this spring being turned outward, the opposite end is of course thrown under the Body-Brace, or other instrument to which it may be attached. Then, by adapting the shape of the pad and length of the spring to the nature of the difficulty, the application of the Brace having already diminished visceral weight on the affected parts, we are enabled to af-

Fig. 13.

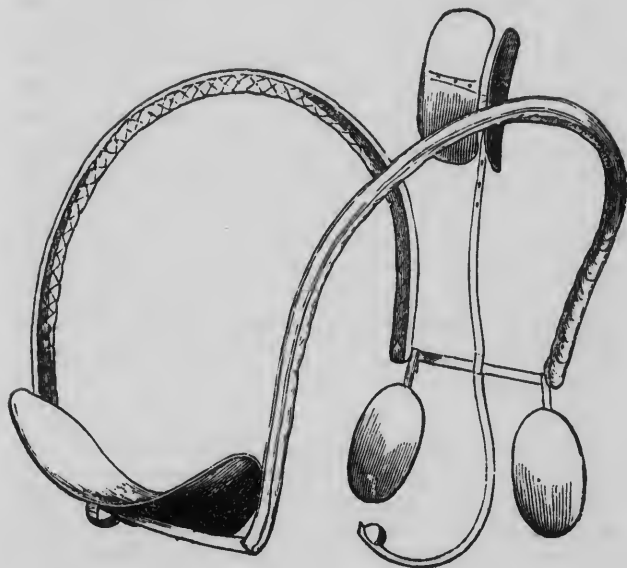


FIG. 13.—View of the Body-Brace, with curved spring attached, for cure of piles, prolapsus ani, and weakness of the perineum. When used for the latter purpose, the pad, which is fastened to the end of the curved spring, by means of a screw, is of a different form, being nicely adapted to the locality of the weakness. This attachment has proved itself an invaluable auxiliary to the Brace in the treatment of Prolapsus Uteri.

ford immediate relief by securing permanent pressure and support at the desired point, *and there alone*, without touching any of the adjoining parts.

All previous attempts to support these parts have been made either by bandages and straps, or by springs, better arranged for producing excoriations and strangulation of the flesh, than for administering relief. Besides, the compress attached to straps exerts but little influence on the part to be supported, from the fact, that the intermediate points are unavoidably receiving the same amount of pressure.

It is also worthy of note, that this superfluous pressure upon the adjacent or intermediate parts, is generally *the* cause of failure at the point where the pad is applied. It must also be attended at all times with serious inconvenience to the patient, and oftentimes with the most aggravating results.

The above appliances are all made in perfect accordance with the laws of anatomy and physiology. Every diseased locality may now be properly supported, without weakening or restraining the motions and growth of the suffering parts, and also without injurious pressure upon sound portions of the body, the most comfortable sensations being produced as soon as the different instruments are applied. Indeed, the true test of being well fitted, is our unconsciousness of the instrument's presence. This was strikingly illustrated in the recent case of a clergyman, who, shortly after the application of one of these instruments by the author, said, "*I feel greatly supported, but—the support seems to come from out doors*"!

WHO ARE THEY THAT REQUIRE MECHANICAL SUPPORT ?

ALL public speakers and singers, who have any irritability about the throat, or who have an ungovernable and cracked voice, and whose vocal exertions are succeeded by

languor and fatigue, attended by a sense of sinking or fainting at the stomach, and by an aching in the back.

All who have dull pains and a sense of oppression about the chest, with limited or hurried breathing on slight exercise, accompanied by short cough in taking a *full* inspiration, especially where there is any predisposition to bleed at the lungs. Those who are in confirmed consumption will find great relief to the last moment of life.

All who are troubled with palpitation of the heart, and general nervousness, or with hysteria, lowness of spirits, gloom, causeless crying, religious hallucinations, hypochondria, melancholia, and all who labor under any temptation to destroy themselves.

All who are dyspeptic; who complain of those dull, dragging pains in the side, resembling affections of the stomach, liver and spleen, and accompanied by a sense of deathly sinking or "*goneness*," which are materially aggravated by exercise, or the assumption of the erect posture, and which are also attended by a painful and discouraging sense of *heaviness*, or *shaking*, in walking or riding.

All who are troubled with constipation, chronic diarrhea, or the worst forms of dysentery; all who are habitually afflicted with colic, and with bleeding or blind piles.

All who have chronic peritonitis; who are swag-bellied, and predisposed to rupture of the bowels; and all who are afflicted with *femoral*, *inguinal*, and *ventral* hernia.

All having affections of the prostate gland, or who have any affection of the urinary bladder, and who are afflicted with seminal or genital weakness.

All who have any spinal affection, whether it be curvature, irritation, or weakness of the spine, and who are accordingly troubled with dull pains between the shoulders, or continual wrangling and grinding pains in the small of the back and in the hips; who experience coldness, numbness, swelling, varicose veins, and weakness of the lower

extremities ; and especially those afflicted with chronic milk-leg.

All ladies who are subject to miscarriages and abortions, or who suffer much in the latter period of child-bearing ; but more especially is support required immediately, and for weeks after delivery ; when it should be applied over the linen bandage.

All who have any bearing down or falling of the womb, or who are afflicted with leucorrhea, and all who labor under painful, interrupted, or profuse menstruation. Even *barrenness* has, by the use of the Body-Brace, been proved to arise from a mechanical cause.

All weak, lax-fibered, and rickety children and youth, who droop, lean, and lounge, and cannot endure much exercise ; but particularly young girls, just arriving at maturity, who, if neglected at that age, seldom recover.

All who from habit or occupation are disposed to droop ; or who are of a delicate frame, should be supported in walking, riding, or traveling.

All persons recovering from long confinement by fever or other cause ; and, lastly,

All " that go down to the sea in ships," if troubled at all with sea-sickness.

Inasmuch as all of the above ailments *may* be caused by the descent of the internal organs ; they may also be relieved by supporting the back, and lifting the abdomen. Reflect upon this before you conclude that we have promised more than we can perform.

RULE OF MEASUREMENT, OR HOW TO SEND FOR THE BODY-BRACE AND OTHER APPLIANCES.

By drawing a tape snugly around the hips, over the linen, an inch and a half below the top of the hip bones, and sending the number of inches, with a description of the form, the Body-Brace, or any of the other instruments, may be

sent to any part of the United States. Persons measuring twenty inches wear No. 1 ; twenty-two inches, No. 2 ; and so on, increasing *one* in number for every two additional inches.

In sending for the Rupture Truss, it will be necessary to describe the nature and locality of the rupture, whether femoral or inguinal ; or, in other words, whether of the *groin*, or lower down upon the thigh ; and whether on the right or left side, or on both. In case of ventral hernia, or rupture of the navel, it would be well to state, whether the abdomen is flat or prominent.

Applications for the Complete Spinal Prop, should be accompanied with a minute description of the patient ; and so likewise should those applications for support for lateral curvature, and consequent projection of the right or left shoulder, cases which may be reached by a Body-Brace with a long *standard*. But in all such cases it is highly desirable that the description should be obtained from a physician or surgeon.

Whenever an applicant is not properly fitted, the instrument, if unsoiled, will be exchanged, provided it be immediately returned, either by express or private conveyance.

HOW TO APPLY AND MANAGE THE AUTHOR'S BODY-BRACE, AND HIS OTHER CURATIVE INVENTIONS.

Do not be afraid of breaking the instrument, but open it amply, and bring it around the body, resting the bows snugly over the hips. Then fasten the slip-lock in front. The large front-pad should be nearly or quite down to the bone at the lower abdomen. The upper back-pads should be behind the kidneys, in the hollow, and at equal distances on each side of the spine. If too high or too low, they can be let up or down, by taking off the connecting nut with a pair of pincers. If too far apart, take out the little screws which fasten the pads to the cross-bar, and bring them

nearer to each other. If one presses harder than the other, take a pair of *plyers* and twist the standard. If they press too much at their upper edge, bend the top of the standard back. If the standard is not exactly behind the spine, slacken the screw connecting it with the mainspring, and put it in the right place.

In case of a *lateral* curvature, push the standard from the center, as far as the convexity of the curve. Then, with a strong pair of *plyers*, twist the standard so as to cause one of the pads to press firmly upon the convexity, crowding it forward, and towards the center, thus making a reliable fulcrum of support at that point, without allowing any pressure upon the concave side of the spine. As fast as the curvature recedes to the center, move the standard in that direction; and in order to continue the firm pressure of the pad, the standard may receive another twist with the *plyers*. These cases should be attentively watched. If the hip pads do not press to suit, change their position by loosening a screw. Should the front-pad not sit in the center of the body, it may be adjusted in the same manner. Should it not turn under and *lift* enough, take the *plyers* and twist the mainspring, or front-bar to which it is attached, so as to throw the lower edge of the pad *inward*. But if it turn under and lift *too much*, twist it the other way.

In applying the Instrument, the front-pad should be held down with one hand, and the abdomen raised up with the other. When these devices are properly fitted, if they do not produce a comfortable sensation, something is wrong. But whatever the cause may be, it is easily remedied, especially if it arise, as is sometimes the case, from the susceptibilities of the patient, in which case the Brace should be frequently removed, until the patient feels comfortable under its influence. It will sometimes create nausea; but, whenever this or great nervousness occurs, it betokens the need of the instrument.

As the Body-Brace is often worn by ladies and gentlemen simply to improve the form, it is proper to add, that it should be frequently laid aside, its principal office in such cases being that of a *prompter* to the erect posture.

LETTERS AND CERTIFICATES FROM MEMBERS OF THE MEDICAL PROFESSION.

THE following Letters and Certificates, sustaining our views of Mechanical Pathology, and acknowledging the power and efficacy of our appliances for the relief and cure of Chronic Diseases of the Trunk, will, it is earnestly hoped, secure the candid consideration and fraternal action of other members of the Profession.

From Members of the Medical Profession in the City of New York.

The undersigned have examined Dr. Banning's novel views on the mechanical pathology of many affections of the viscera, and believe them to be highly interesting, and worthy the serious attention of the medical profession.

VALENTINE MOTT, M.D.,
H. McLEAN, M.D.,
J. KEARNY RODGERS, M.D.,
STEPHEN R. KIRBY, M.D.,
STEPHEN BROWN, M.D.,
ALEX. B. WHITING, M.D.

From PROFESSOR DICKSON, of Charleston, S. C.

The principle which Dr. Banning has so ingeniously carried out, seems to me widely applicable to a large class of cases of suffering and debility in both sexes.

SAMUEL HENRY DICKSON, M.D.

I fully concur in the above.

JAMES JERVEY, M.D.

From PROFESSOR GODDARD, of Philadelphia.

I have examined Dr. Banning's instrument for the relief of weakness requiring mechanical support; and, hav

ing also made practical experiment of the same, I am astonished at the results. I would accordingly recommend its use to the serious consideration of the medical profession.

PAUL P. GODDARD, M.D.

From Members of the Medical Profession in Pittsburg, Pa.

We, the undersigned, having used in our practice Dr. Banning's Body-Brace, for the relief of cases of simple prolapsus uteri, cheerfully testify to its being the best instrument we have met with, to fulfill all the indications required in the case.

A. N. McDOWELL, M.D.,

T. F. DALE, M.D.,

JOS. P. GAZZAM, M.D.

From Members of the Medical Profession in Savannah, Ga.

To DR. BANNING: Dear Sir— We, residents of the city of Savannah, have had frequent opportunity of witnessing the effects of your mechanical appliances, especially of the *Body-Brace*, and are convinced that they are more remarkable than those of any other instrument which has ever been invented to relieve the pelvis from that unusual pressure of the abdominal organs, which seems to be the inevitable result of a relaxation of the muscular system. And, there can be no doubt that the success which has attended your labors in this place, is wholly attributable to the fact that the Brace is constructed in conformity with the laws of anatomy and physiology. We have therefore taken pleasure in lending our names to promote the cause you have espoused. We sincerely wish you success in your endeavors to do good, and trust that you may enjoy a long life of usefulness.

H. K. BURROUGHS, M.D.,

(Mayor of the City,)

C. P. RICHARDSON, M.D.,

J. C. HABERSHAM, M.D.,

J. S. MORRELL, M.D.,

A. CUNNINGHAM, M.D.

From Members of the Medical Profession in Southport, Wis.

To DR. E. P. BANNING: Sir—The undersigned having carefully examined and tested your Body-Brace, deem it

due to the interests of Medical Science, to say that we consider it a most valuable instrument in the treatment of all that class of bodily afflictions requiring mechanical support. Its lightness, its coolness, and the facility of changing its points of action, we admire; but especially worthy of note, is the abundant *lifting* action of its abdominal pad, and its efficient support to the spine and shoulders. The instrument is in strong contrast with other mechanical supports, designed to accomplish the same object. And allow us to add, that as your movements in this place have been fair, gentlemanly, and professional, we recommend you to the friendly notice of the profession, wherever you go.

DAVID WALKER, JR., M.D.,
F. W. HATCH, JR., M.D.,
O. JENKS, M.D.,
HAYS McKINLEY, M.D.

From Members of the Medical Profession in Louisville, Ky.

DR. BANNING—Sir: having examined your “Body-Brace,” designed for the relief of weakness of the pulmonary, digestive, female, and spinal systems, as connected with general or local muscular debility, it gives us pleasure to say, that we deem it a valuable discovery, as an auxiliary in the treatment of the above and analogous afflictions. In view of the anatomical and physiological principles of its construction and harmony with the natural economy of the body, we also deem it greatly preferable to any other device in use.

T. S. BELL, M.D.,
LEWIS ROGERS, M.D.,
JOSH. B. FLINT, M.D.,
W. C. GALT, M.D.,
W. E. EWING, M.D.

*Extract of a letter to the author, from DR. H. H. SEXTON,
of Galesborough, Ill.*

“I have used your Brace most successfully in cases of from two to seven years’ standing, and knowing the great benefit derived from the use of it, I presented it to the Medical Convention, which met at this place to choose delegates to the National Medical Convention. You will

oblige me by forwarding immediately the Braces herein ordered, as several of my patients are now waiting for them. I use your mechanical devices in all cases of Pro-lapsus Uteri, Dyspepsia, and Bleeding of the Lungs, as well as in all nervous affections.

H. H. SEXTON, M.D."

The following is an extract from a letter which appeared in the Daily Globe, published at Cincinnati, Ohio.

"I take the liberty to invite the members of the Medical Profession to examine Dr. Banning's book, entitled 'Common Sense,' and to communicate to the public, in some way, their opinion of the correctness of its principles. I would myself review the work, if I were now in the practice of physiological and pathological investigations. It is hoped some one of our medical professors, competent to judge of the subjects treated by Dr. Banning, will favor us with such a review.

WM. HENRY BRISBANE, M.D."

DOCTOR J. C. ROSE, of Detroit, Mich., in a recent letter to the author, says:—

"I have, for the last two years, had the satisfaction of witnessing the beneficial effects of your invaluable instrument; having often applied it myself to patients who had been medicated for years with only momentary relief, many of whom had been frequently confined to their bed for months at a time; and, in a few days after the application I have had the satisfaction to see these patients walking and riding out.

J. C. ROSE, M.D."

Extract of a Letter from Dr. PLINY POWER, of Detroit, Mich.

DR. E. P. BANNING: DEAR SIR,—I hope that indisposition will not prevent your continuing your humane enterprise. I have ever been in favor of mechanical support, applied to diseased and debilitated organs. Until recently, however, I have known but little of the power of your instrument in relieving pulmonary complaints. I now have ocular demonstration of the fact, daily. Patients of my acquaintance who have labored under organic disease for years,

and on whom the whole catalogue of medicines has been exhausted, *without the least beneficial result*, have been, by the application of your Brace, restored to a comfortable state of health in a few weeks.

I am prompted to write this from having recently visited my old country circuit, and seen some of my old patients, whom I could not cure, and whom I had long since given up as hopeless, so far, at least, as medicine was concerned, that are now entirely well, from the application and use of your truly invaluable instrument.

PLINY POWER, M.D.

Extract of a Letter from DR. DANIEL PORTER, of Bowling Green, Ky.

DR. E. P. BANNING: DEAR SIR,—Permit me to bear to you and the world my humble testimony in behalf of the power and efficacy of your Body-Brace, in the treatment of a long list of maladies, to which both sexes are liable, but especially the female; many of which maladies have long been regarded as the "*opprobrie medicorum*" of the profession, and might have continued to be so regarded, had it not been for your invaluable discovery. But now, after a six months fair trial of your Brace, in almost every variety of case, I feel the agreeable assurance, that we have in this instrument a sovereign remedy for a large proportion of these heretofore generally incurable diseases, for which all who have hearts to feel for the woes of others, should be profoundly thankful, and to him especially who is the author of so great a blessing. For a very long time, or rather since the laws and structure of the human system have been well understood, medical men have acknowledged the want of some mechanical agent to act precisely upon the principle of your Brace; but the difficulty has been to construct the proper instrument. Many efforts have been made to supply this want, but without success, until the discovery of your ingenious contrivance; in which the medical profession, as far as I can learn, feel satisfied that we have the ultimatum of mechanical aid, to meet the indications of a large class of painful affections.

DANIEL PORTER, M.D.

The author trusts, that after such an array of professional testimony in favor of his Braaces and Supports, physicians will no longer feel compelled to say that they "*know not where to go to look for mechanical support of a reliable nature.*"

MORBID RELAXATION OF THE ABDOMINAL AND DORSAL MUSCLES.

It will be remembered that these muscles are the elastic bands which preserve the upward and inward, well-supported and packed condition of the internal organs of the human trunk. Their permanent or habitual relaxation, and the consequent inability to maintain the erect posture, cannot fail to produce a general and ruinous derangement of the truncal mass. This arises from the fact that the muscles lose their power to resist the gravitation of the internal organs. Instead of acting like strips of India-rubber put upon the stretch, perpetually striving to get back to their original dimensions, they become as inelastic as wet fiddle-strings, permanently-yielding to each successive distending force. The bowels then crowd upon the muscles, particularly at the lower abdomen, enlarging it, and causing a distension of its walls. The intestinal mass, no longer of a compact, round and snug form, becomes separated and elongated, ceasing to support the stomach, liver and spleen, which in their turn drag upon the diaphragm or floor of the lungs, pulling it down from its natural and high position, so that only a point of the heart, instead of its whole lower surface, rests upon the same.

The lower organs must now act as a pack-horse to those above, which having fallen forward and downward, out of the axis of the body, greatly increase the leverage of gravitation against the spine. But the immense weight of the deranged mechanism will not long permit these lower organs to discharge the obligations of their new position.

Fig. 14.

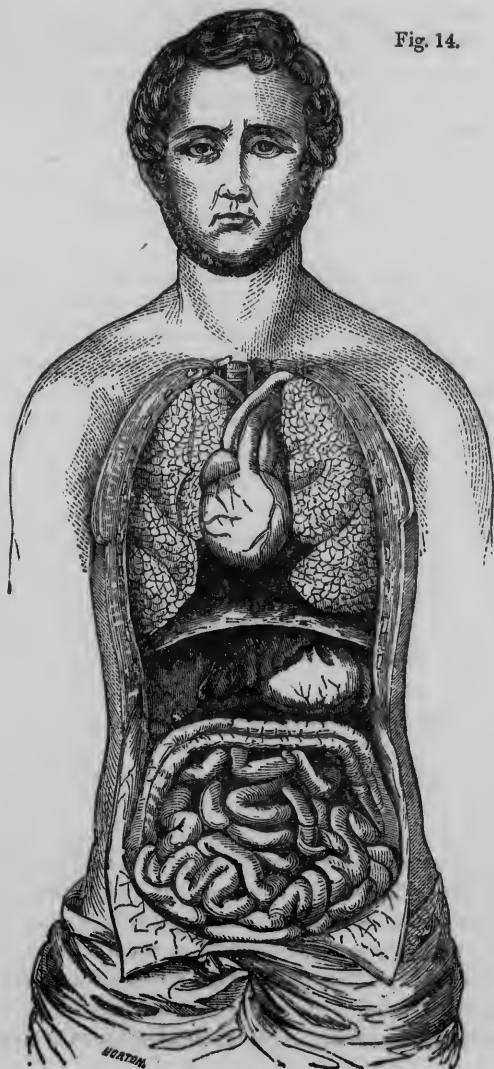


FIG. 14.—Front view of the sunken bowels, with consequent dragging upon the heart and lungs, and compression of the pelvic organs.

The consequent enlargement of the abdomen, and the perpetual and heavy burden experienced by the muscles of the back, in antagonistic efforts to keep the body erect, must soon compel a ruinous displacement of all the organs of the truncal cavity. (See Fig. 14.) Page 81.

But it has been objected that such is the susceptibility of motion in the human tissue, that no injurious tendencies can ever result from the trifling derangements to which the organs are liable. It should be borne in mind, however, that the human system is a perfect machine, endowed with vitality and great sensitiveness; that the vital property is only able to operate when the machine is in perfect order, and that, therefore, the most trifling derangement of any part of the machinery must be attended with injurious effects. The finger, for instance, has a natural office to perform. But if you suspend from it even an ounce ball for twenty-four hours, it will undergo more or less pain, become somewhat elongated, and begin to lose its elasticity and power; not so much, however, because of the violence applied to it, as for the reason that it is subjected to a new action and relation; and, although adapted to lift a heavy weight, it will, if continued much longer in this extended condition, lose entirely the power to perform its natural functions.

MORBID EFFECTS OF RELAXATION UPON THE VOCAL ORGANS.

Bronchitis of Public Speakers and Singers—Throat Ail— Weak and Unnatural Voice.

THE possession of a clear, smooth, and melodious voice, depends upon the correct action of the abdominal muscles, which lie at the foundation of vocal philosophy, and are admirably adapted to force the well-packed internal organs against the lungs, thus pushing the air in a direct line with the natural course of the slightly curved vocal tube.

The relative position of the abdominal muscles to the air

in the vocal tube, resembles that of the powder to the ball in the groove or barrel of a gun. The conditions necessary to dislodge this body or ball in the most effective manner, without injury to the groove, and the economy of power observable in these conditions, are somewhat analogous to the wise provisions by which the air is expelled through the vocal tube without abrasion. In the former case, the power being applied directly in the rear, and the movement being in a straight line, great force is thus obtained with a small amount of power, while at the same time the tube remains uninjured by the course of the ball. If, however, the power be applied obliquely, the opposing forces will produce an injurious vibratory motion. But should the expelling power be rightly applied, and the tube or groove of the gun be crooked, the ball, when it meets the angle or curve, will strike the opposing point, its motion will be checked, and a general concussion will ensue. Or, if the outlet be not as large as the ball, the gun will be likely to burst. To make fire-arms effective, there must be a proper use of power, a straight tube, and an ample outlet. The application is obvious:

The abdominal muscles, which are situated at the end of the truncal cavity, and the chief propelling vocal power of which lies at the lower part of the abdomen, answer to the power which is applied at the base of the groove, beneath the ball. The body of air in the vocal tube, which requires the vigorous action of these muscles to expel it through the same, answers to the ball in the groove; whilst the wind-pipe and air-cells, which form the vocal tube, may be compared to the groove or barrel, and the mouth to the muzzle of the gun. The *erect posture*, the importance of which it would be difficult to over-rate, and which answers to the straightness of the gun, is a sufficient guarantee for the proper position of the vocal tube, and the uninterrupted passage of the air. So important, indeed, is this posture, that when maintained in its integrity, and accompanied by the

elevated head and open mouth, as well as the healthful action of the abdominal and dorsal muscles, every variety of musical sound may be produced; it being, of course, understood that the throat and its attachments perform the same office that the fingers perform in playing on the flute, that is, simply changing the shape of the air, or in other words, modulating the sound.

But how is it possible that the conditions here set forth as essential to the development and preservation of the voice, and the protection of the vocal apparatus, can ever be complied with in the present relaxed condition of the abdominal muscles? Now that the body is drooped, the shoulders and chin depressed, and the internal organs deprived of support, how can the delicate texture of the vocal tube resist that concussion and abrasion which must inevitably produce the most ruinous effects upon the system? For it is plain that the application of the expulsive power must now be made either obliquely, or at right angles. In other words, by sinking or drooping the shoulders, and contracting or depressing the chest, the power must be applied at opposing points. This will, of course, produce a general concussion in the cells and bronchia; in which case, so much of the air presses downward upon the diaphragm, that if there was located a vocal apparatus at this point, we should doubtless have some vocal demonstrations in support of the position here assumed.

The air being thus scattered in all directions, a portion of it goes oscillating and rasping up the throat in confused and ragged currents, until it strikes the roof of the mouth, when, by the acute angle in the passage, it is again concussed and scattered, a part of it seeking egress through the nose,—that being the straightest and most convenient exit,—whilst the whole performance is accompanied with a flat, jarring, and unpleasant voice. (See Fig. 30, p. 304.) Another effect is, that the air-tube being curved, and the outlet contracted, the air moves in a ragged stream, in lieu of

a pure smooth current, injures the bronchial or lining membrane of the throat and windpipe, and of other smaller tubes, thus mechanically irritating their surfaces, by acting upon them like the hatter's bow-string upon the fur, inducing at the same time a sense of dryness and aching, especially in speaking and singing. The surface is soon exposed, pimples begin to appear, and the result is, a genuine specimen of bronchitis, or, as it is often erroneously termed, "the throat disease of public speakers." These views are strongly corroborated by the fact, that almost all broken-down public speakers and singers complain much of weakness and goneness at the stomach, and pain in the back. We also find that the subjects of Bronchitis, or Throat-ail, are the relaxed and feeble; those who generally sit, stand, or walk in the curved or drooping posture, with the head bent forward, the chest compressed, and the abdomen relaxed; who are deprived of regular exercise in the open air. By far the greatest number of cases are found amongst mechanics, school-teachers, and ministers of the Gospel, who preach *calmly* by note from a low desk. (See Lecture on "The Philosophy of the Human Voice," in another part of this work.)

On looking into the throat of the public speaker, or any other person that complains of Bronchitis, we find either a pale, relaxed, flabby, or thickened state of the lining membrane, with a very irregular surface; but more commonly an irritated appearance, having no prevailing color, being red only in patches, with here and there a few specks or points of ulceration. The voice sounds husky, and is painful to the sympathetic ear, as well as to the throat of the patient, who feels, ordinarily, great indisposition to speak, from the fact that almost every effort of the kind is attended with uneasiness and pain. These, and other local effects, are accompanied by some sympathetic and constitutional symptoms, such as headache, occasional fever, and general nervous irritability.

Now, what will be the proper course of treatment? Will medicine or a change of climate effect a cure? Certainly not. There must be a return to the laws of the vocal apparatus; let these be obeyed, and nature will perform her functions. To this end we should cultivate the erect posture; elasticity of abdominal muscle; the broad chest, with lungs compressed from below: the elevated chin, and the widely-opened mouth, with great suppleness of the lips. By these means all the vocal organs and relations will be brought into their proper position, and thus the air may be expelled, in accordance with the laws of philosophy and health.

Many persons, however, are so weak at the back, sunk-en and "gone" at the stomach, and so debilitated and discouraged, that they can never get fairly under way, in the cultivation of these important features of physical education, and therefore require some form of mechanical support, to aid them in their earlier efforts.

USE OF THE BODY-BRACE FOR BRONCHITIC OR BROKEN-DOWN
CLERGYMEN AND OTHERS—THROAT-AIL—WEAK AND UNNATURAL VOICE.

CASE 1.—A distinguished clergyman at Springfield, Vermont, was said to be nearly laid aside with what was supposed to be consumption. He was the subject of heavy night sweats, and great general debility. His voice was weak, flat, and husky; his throat sore and irritable, and his cough very troublesome. Everything that kindness could devise had been done for him, and he was given up to die. He called upon me for advice. He had accustomed himself to speak with his mouth nearly shut, throat curved, chest contracted, and abdomen relaxed. His palate was very long, and rested upon the root of the tongue and larynx, or entrance to the windpipe, But, by faithfully using the Body-Brace, and following the instruc-

tions he received, his cough ceased, his voice and throat improved, his countenance became dark and rugged, and being restored to health in almost every particular, his return to his pulpit was a matter of gratulatory surprise, both to the medical profession and the congregation to which he ministered.

CASE 2.—An Episcopal clergyman of Trumbull county, Ohio, whose throat was much affected, and who always preached with his shoulders drooped, his chin resting on his bosom, the top of his head turned to his audience, and his face to a low desk, furnishes another remarkable instance of the good results of wearing the Body-Brace. The tones of his voice were monotonous, his gestures weak, and indeed his whole performance was said to be usually devoid of everything attractive, in a physical point of view. This gentleman did us the honor to attend a course of lectures, which we were delivering at the time, on the causes, prevention, and cure of diseases incident to public speakers and singers. On the following Sunday we attended divine service at the Episcopal church, and heard him preach. Not suspecting any improvement in so short a time, we expected to witness a most miserable performance, but to our great surprise he maintained throughout his discourse, an erect and manly bearing; his voice being agreeable to all concerned. After sermon he introduced himself to us, and said: "Sir, your lectures and your Body-Brace have been of use to me. To-day I have preached louder and easier, ten times over, than ever I did before."

CASE 3.—Another clergyman, similarly afflicted, who had heard a lecture on this subject in the State of New Hampshire, and made application of one of our instruments, became so much better in a short time, that he said, with tears in his eyes, as we were about to part, "Sir, I am willing to go and put up handbills for you; you have given me new life, new hopes, and restored me to usefulness."

CASE 4.—At Meriden, also, in the same State, a reverend gentleman under the same circumstances, approached us thus : “ Doctor, what a load has been taken off my mind ! I have been looking forward to a painful period of uselessness. But the use of your Body-Brace has made my prospects bright and full of promise.”

CASE 5.—On another occasion we were waited upon by a lady of Middlesex county, Connecticut, who for several years had been engaged in teaching. Her voice had begun to fail. Her throat was sore, dry, rough, and painful, her general health being also affected. She was obliged to use her voice continually, and spoke with great labor and effeminacy. She was taught that it was improper and immodest for ladies to open the mouth and move the lips freely in speaking ; that it was masculine to walk erect ; that the head should be gently bowed down and the shoulders thrown forward. She had also acquired that apish shape called the Grecian bend, in order that she might likewise be an example to her scholars, of the strange views of posture which she had labored to inculcate. Her good sense and keen perception soon grasped the reasonableness of our exposition. “ I see it all,” she said, “ and am sick of it already.” With the aid of the Body-Brace her attitude was accordingly changed to one more proper and dignified ; and so remarkable was this change, that she was not recognized while walking the street. She was compelled, at first, to make great exertions to bring the abdomen into subordination, and keep the chest quiet while speaking. But at length, and never shall we forget it, she succeeded by a contractile effort of the abdomen, in bringing forth a correct sound from the vocal tube ; and as the clear, smooth, and liquid voice reached our ears, she clapped her hands, exclaiming “ I have it ! I have it ! ” From that time she began to teach with ease and pleasure ; and also to *sing* with her pupils, which she had never before been able to do, owing to the flatness of her voice. Her throat

gradually improved, her respiration became free and full; her pulmonary circulation was unobstructed; and, from a state of mental depression and physical weakness, she was restored to comparatively new life.

CASE 6.—From the age of fourteen to thirty-one, the author's own voice was disagreeable to all, partaking even of the ridiculous. He was always out of breath in talking, and ended the shortest sentences in a whisper. But by a rigid course of discipline, and the use of the Body-Brace, it soon became materially improved in tone, volume, and melody, so that he can now actually sing, *some*. And instead of breaking down, as formerly, in a few moments, when delivering an animated discourse, he can address a large audience for three successive hours without becoming hoarse. He has lectured three hundred times in a year; and his health is constantly improving. These are facts, and their bearing is important.

CASE 7.—A clergyman of Coldspring, L. I., called upon us for advice; he was so feeble and melancholy that he could scarcely sustain himself during service. In one word, said he, my preaching is *good for nothing*! We informed him that he would be immediately relieved of his gloom, and be able to preach like other folks, if he would only wear the Brace; for we discovered by his drooped shoulders and pendulous abdomen, that his internal organization was greatly deranged, and that therefore, the true philosophy of vocality was entirely broken up. He cast a most doleful look of unbelief at us for this presumptuous conclusion, and said, "I hope in God's mercy that you may tell the truth." This was on Saturday. On Monday morning he returned to our office with an elastic step and *cheerful countenance*, saying, "Yesterday I preached in Brooklyn for Rev. Mr. P.; with an ease and animation that I never had done before; I now feel like *somebody*. But whether your Brace has done it or not, I can

not tell. Mr. P. said to me after service, 'Why, Mr. S., I never heard you preach so before!'

CASE 8.—The Rev. Dr. —, of New York, a large and well-formed man, called for advice. He said, "I am not sick or feeble; but I find that after preaching on Sunday, I feel quite dispirited; I have examined your views on bronchitis, and of vocal philosophy, and am satisfied that I am a candidate for throat-ail. I am much delighted with the common sense views you have taken of the subject of bronchitis, and I think your *Brace* will tend to ward it off." A few weeks after this, he remarked, "I find your *Brace* an essential aid to me in speaking, but more particularly does it prevent my feeling so *Mondayish*. You will not be surprised to learn that I occasionally wear it as a luxury. Indeed, I think the instrument should be worn by every speaker who feels the least tendency to physical prostration after a vocal effort."

CASE 9.—The Rev. Dr. McE., who was considerably past the middle age of life, complained of great soreness and roughness of the throat, with an accumulation of viscid mucus, in preaching, in connection with great weakness of his back and stomach, which he described as a "great goneness." The *Brace* was applied, and he was so remarkably comforted and strengthened that he procured another, averring that he could never think of being without one. Such was the impression made upon his mind with reference to hundreds of clergymen throughout the country who were nearly superannuated by "throat-ail," that he gave us such letters to individuals throughout the different cities of the South, as resulted in the relief of many more who were similarly afflicted.

CASE 10.—Another old and distinguished, but for many years superannuated, clergyman in New York, complained of dyspepsia, with constipation and all its usual attendants. These symptoms were accompanied by the bronchitis of public speakers, a dry, rough soreness of the throat and

faucis, with a painful huskiness of voice; all of which were aggravated by the least vocal effort. He was also very gloomy and melancholy. On application of the Braee, with no other external or internal appliance, he found every symptom of his dyspepsia vanish, and with it all its gloom and melancholy. He frequently called upon us after this, to say that he remained well in body and mind; and that instead of becoming fatigued by *preaching*, the exercise afforded him great relief, especially from those indispositions consequent upon long contracted sedentary habits. So deeply was he impressed with a sense of the great amount of ministerial suffering and superannuation resulting from muscular laxity, that we had the honor to receive another circular letter, urging all clergymen upon the first approach of vocal debility, to seek *mechanical* relief.

CASE 11.—The Rev. Caleb J. Tenney, D.D., of Northampton, Mass., in a letter to the author says:—"Thirteen years ago I sustained a loss of voice, which for three years was almost total. Subsequently my voice has continued weak and indistinct. One year ago I commenced the use of your Body-Braee, and have found *very marked* and *decided advantage* from it. I can speak with more ease than formerly, and the strength of my voice is greatly increased. Now, although I preach once or twice almost every Sunday, I should scarcely attempt the service at all, if I had not in constant use, your physiological Braee, which, from my own experience of its certain utility, I cheerfully recommend to all suffering a like calamity."

CASE 12.—The Rev. David Caldwell, Rector of St. Paul's church, Norfolk, Va., also writes:—"I am now truly rejoiced to hear you are coming South. I hope you will find the trip one of profit to yourself, for I am sure it will be one of benevolence to others. If you desire it, I will write you out an accurate description of how great service your Braee has been to me, especially as a stay and sup-

port in speaking. If I could not procure another, I would not part with it for ten times its weight in gold. I hope you will by all means visit Norfolk. I know many who need your Brace, and who, if they knew its excellence, would furnish themselves with it. I am determined to keep a second Brace always on hand, so as to be provided for in case of accident. I have been repeatedly urged to write to you for Braces; and although wholly averse to engaging in secular matters, I regard your Body-Brace such a blessing to individuals, that if you will send me one dozen by one of the weekly packets between this port and New York, I will be responsible for them."

CASE 13.—The following extract from the *Daily Globe*, published in Cincinnati, is from the pen of Dr. Wm. Henry Brisbane. Coming right to the point, he says:—"It is proper when we have received a benefit by any remedial agent to acknowledge it for the public good. Having tried Dr. Banning's Brace for the support of the abdominal and thoracic organs, I hesitate not to give it as my opinion, that it is well adapted to the purpose for which it is designed, and I would earnestly recommend it to all persons who, like myself, find it difficult to keep the body erect. I would particularly call upon public speakers who are afflicted with any weakness in the chest to procure this instrument, and make the trial of its utility."

CASE 14.—The Rev. C. H. Page, of Louisville, Ky., recommends in strong terms the use of the Brace for public speakers. His language is: "Having performed without inconvenience, with the support of your Body-Brace, two public services, requiring the standing or kneeling posture, besides riding on horseback and walking some miles, I found myself during Sunday, and the following day exempt from pain of the back, to which for years I have been subject, and from which I have thought that I should be compelled to relinquish the ministrations of the sanctuary. This statement is made from the conviction that the Brace is a

valuable appliance, and will be of advantage to those who are engaged in public speaking."

CASE 15.—The Rev. P. F. Jones, of Kalamazoo, Mich., says: "The effect of the Body-Brace has been such, that my gratitude prompts me to say a few words to you and the suffering. . . . My cough entirely stopped after one week, and, during the last two months, I have performed my ordinary duties on Sunday with ease; whereas, without the Brace, I became fatigued before one-half of the services were performed. This is also the testimony and experience of others. The Rev. Mr. Anderson, who was quite feeble, put on my Brace as an experiment, and, after preaching in it for one day, said that he could speak with much greater ease, and without his usual depression of mind. For the benefit of public speakers, this instrument is the most admirable thing yet discovered. But there are so many *humbugs* in the world, that had it not been for my long acquaintance with you, I could not have been persuaded to experiment upon myself."

CASE 16.—More recently, in the city of St. Louis, the author became acquainted with perhaps the best solo singer in the country. Struck with the soft and full tones of his voice, and knowing that he made them by abdominal effort, we ventured a compliment to his proficiency and skill. "Sir," said he, "I owe it all to you. Once my voice was flat and nasal, and my throat irritable and sore from vocal effort. About three years since, I learned from you that my difficulty lay in not making any lifting effort with the abdominal muscles; that my chest and throat were doing all the work; and that these organs being unjustly taxed to supply the lack of those legitimate resources of the lower trunk, would, sooner or later, be rendered inefficient and powerless, even in the discharge of their own proper functions. I then immediately determined to follow your instructions, and from that time my general health and my voice, with the aid of your Abdominal Elevator, have been

steadily improving, so that I can now sing any desired length of time without fatigue."

MORBID EFFECTS OF RELAXATION IN PRODUCING AFFECTIONS
OF THE LUNGS.

THE diaphragm, or floor of the lungs, being now deprived of its usual support, by the withdrawal of the abdominal organs from their natural position, its fibers can no longer be put upon the stretch ; in consequence of which, they soon lose their power to contract, and are accordingly dragged upon by the falling organs. This inevitable result of a relaxation of the abdominal belts, and consequent falling of the bowels, causes, in conjunction with the influence of the surrounding atmosphere, a compression of the waist, and an elongation of the chest, as well as severe depression at the stomach ; and, as the body is also of the drooping form, the weight of the trunk prevents the expansion of the short ribs, by crushing in the chest at its most movable part. (See Fig. 15, p. 95.)

The restriction thus imposed upon these ribs, destroys the power of the intercostal muscles in this part of the chest, to say nothing about the separation of their front extremities. Inspiration must therefore be chiefly effected through the instrumentality of the superior intercostals ; and hence it is that in all cases where the stomach is retracted, and the waist compressed, inspiratory efforts will not expand either the sides or abdomen. Respiration, accordingly, becomes short and quick, being performed, as in the case of consumptives, who are troubled with shortness of breath, by a heaving of the upper portion of the chest with the aid of the lobes in that locality.

The philosophy and mechanism of breathing being thus interfered with, the most dreadful effects are entailed upon the sufferer, such as bleeding at the lungs, cough, shortness and tightness of breath, as if breathing through a sieve,

Fig. 15.



FIG 15.—General appearance of a person laboring under a fallen and dragging condition of the Viscera

dead, dull, fixed, or wandering pains in the breast, together with a sense of pulling in the center of the chest, or drawing at the pit of the stomach, as though there was something in that locality resisting all efforts to inhale a full breath, and defeating every attempt to sit erect and shove out the chest. This pulling sensation is explained by the fact, that when the diaphragm is dragged down from its elevated position, as is now the case, the mediastinum, or partition between the right and left lungs, is put upon the stretch, and thus placed in a very unnatural situation, it being no part of its office to sustain the organ to which it is attached. It is this stretching of the mediastinum that makes all consumptive persons complain of a sense of pulling, or of tightness or stricture in the center of the chest, the tense membrane becoming relaxed, and the sensations relieved whenever the diaphragm rests upon, or is firmly supported by the organs below. This deranged condition must permanently compress the lower, and throw a great burden upon the upper lungs, thus increasing the labor of respiration, and thereby establishing sundry local and constitutional difficulties, *the mechanical origin of which* accounts for the fact, that whilst they are always relieved, and often eradicated by the judicious elevation of the visceral mass, and the consequent shortening and expanding of the chest, they *never* yield to exclusive internal treatment.

Affections of the Lungs, though varying greatly in degrees of fatality, are at all times justly regarded with feelings of apprehension, for it cannot be expected that such delicate organs as the lungs can long remain uncured, without establishing tendencies which too often result in the termination of life.

Whenever the usual symptoms of Consumption exist, the pathology of the disease is the first question to be settled, the prospect of recovery being materially affected thereby. Is the difficulty of an organic nature, or does it arise from simple *mechanical* derangement? For, when

the substance or structure of the lungs is invaded, the prospect of cure is almost in exact proportion to the extent of the disorganization.

We now proceed upon the supposition, that morbid relations are existing in connection with the above named symptoms of disease; and where these do not exist, then although all the symptoms are complete, our views do not apply to such cases. They must be treated in the best possible way, with other than physical or mechanical remedies. But such cases do not often exist; for, however certain it may be in any particular case, that this dreadful malady has not been caused by a morbid relaxation of the muscular bands of the system, it will almost invariably be manifest, that it has ravaged and deranged the machinery of the trunk to such an extent, that no treatment whatever can impart essential relief, without the *aid* of mechanical support.

The general mechanical physiology of man in a healthy state, requires that the body should be erect, the shoulders high, the chest full, the short ribs playing freely, the lungs at perfect liberty, the abdomen round and firm, the stomach full, the back well curved inward, and the bowels elevated and supporting the diaphragm, as in Figures 1 and 6, pages 17 and 43. Whereas, in almost every individual complaining of the above symptoms, we find the shoulders drooped and brought forward, the back strongly curved, and the whole trunk sunken and relaxed, the breast bone being forced inward, and the ribs and lungs compressed, as in Figures 2 and 14, pages 18 and 81.

The bowels having fallen, and the abdomen hard and large at its base, and small and soft at the waist where it is much retracted, the stomach, liver and spleen, and other superior organs, having lost their support, must accordingly descend; so that, in the standing posture, particularly, the patient will complain much of weakness of the back, weight in the abdomen, sinking at the stomach and

tightness in the center of the chest; and, indeed, whenever he attempts to straighten up, throw back his shoulders, and shove out his chest, he immediately falls back, saying that it pains him to stand erect; that it pulls at the pit of the stomach, increases the tightness in the breast, and shortens his breath; all of which is accounted for by the fact, that, in raising himself he is also obliged to raise the bowels, the tension and gasping to which we have alluded being thereby produced.

This deplorable state of things can only be relieved by the due expansion of the chest and lungs. And how is this to be accomplished? By internal and constitutional remedies, or by judicious *mechanical* means? Evidently by the latter, as *medicine* can produce no change in the *form*, or remedy physical defects. First, the abdomen must be properly elevated, so as to lift the superincumbent mass upward and backward, by means of which the lungs will be supported, the chest enlarged at its lower region, and the tightness and stricture removed,—the author's Body-Brace, as we shall presently show, being eminently adapted for this purpose. The patient can then stand erect, or place himself in any required position, without the usual pain and stricture in the breast and stomach, the diaphragm also being thereby elevated and made tense, and caused to contract more perfectly in respiration.

USE OF THE BODY-BRACE FOR CONSUMPTION.

CASE 1.—A young lady of Pittsburgh, about eighteen years of age, returned from the South with almost every indication of seated pulmonary disease. She scarcely passed a day without more or less hæmoptysis, or bleeding at the lungs. Her respiration was very labored and short. She had also much pain in the breast, particularly a "*sense of tightness*," or stricture in the center of the chest, as if breathing through a sieve. The palpitation of

the heart was excessive and constant, accompanied by an intolerable pain in that region.

Her physician, Dr. G., an intelligent practitioner, felt quite sure that there was some organic derangement of the heart, probably of its valves. Her countenance was of a waxen hue, and all who saw her, felt that she was fast falling into the grave. She was unable to sit or stand erect, and was in great misery from continual pain in the back. At the stomach, she felt a most ghastly sense of sinking and vacancy, which, with the pain in the breast, was aggravated by the erect posture, as well as by throwing back the shoulders. The abdominal muscles were exceedingly relaxed, giving her the form of figure 15. She was also afflicted with *prolapsus uteri*, with all its connected and reflected influences on the brain, spine, limbs, &c.

At this juncture, the author visited the city where she resided, to lay before the Medical Faculty his first paper on the physiology of the abdominal muscles, and the application of abdominal support to diseases of the chest, caused by general visceral descent, or relaxation of the muscles of the abdomen, when a committee consisting of Drs. Gazzam, Spear, and McDowel, was appointed to investigate and report upon the same, at an adjourned meeting.*

Previous to this report, at the suggestion of Dr. Gazzam, the Body-Brace was tried upon Miss J., as being a case that would test the principles laid down in the author's paper. The only instrument at hand was an imperfect one, and much too large for the patient. Neverthe-

* The report of this committee was every way satisfactory to the author; and it is matter of regret that he has mislaid the kind resolutions adopted at the time in favor of a cause, to which he has devoted many of the best years of his life. He can only state, from recollection, that the views set forth in the paper which he had the honor to read on that occasion, were characterized in the resolutions as "novel, original, and full of interest to the Medical Profession."

less, it immediately relieved the pain in the back, and enabled her to sit erect; took away the deathly feeling at the stomach; made her breathe freely, and in short, as she herself expressed it, "relieved both body and mind,"—the drawing sensation in the center of the breast being entirely removed. In less than five days she was absent on a visit, and sustained no inconvenience from riding, though previously, the gentle motion of a carriage would cause great distress in the stomach, and generally produce fainting, or a strong tendency to the same.

We are happy to say that the next time we visited her, we found her gay and cheerful; and she assured us that she had not raised one drop of blood since the application of the Brace. Indeed, we were not a little amused to find her inquiring how soon she could be allowed to waltz. This was truly a remarkable case, and the fame of it spread throughout the city. In about two weeks after the application of the instrument the author paid her a visit and found her entertaining company. She is now the mother of an interesting family, enjoying excellent health, and attributes the entire change in her circumstances to the physiological construction and "magical influence" of the Body-Brace.

CASE 2.—Another lady of Philadelphia came to consult with the author. For years she had been supposed to be laboring under pulmonary disease, and was treated for it in the usual manner. She was emaciated and feeble; had a severe and constant cough, with pain in the chest, especially on assuming the erect posture, or in taking a long breath. On directing her to make a full inspiration, she succeeded so poorly that at first we knew not that she had made the attempt. We found, however, that she could not inhale over twelve cubic inches of air, and that the lower ribs were not inflated; they would neither rise nor fall. The heart was in a constant state of excitement, and the head was affected with the whole catalogue of

nervous symptoms. The form was drooping and bent forward; chest compressed; stomach retracted; and the lower belly large and hard while in a standing posture, but exceedingly soft and flabby in the recumbent. She complained of great weakness of the back; of a sense of bearing down and dragging in the groins; weakness and pain in the limbs, numbness, and in short, of everything which might be expected from such a patient. She could walk but a few rods without great fatigue and loss of breath, accompanied by violent palpitation of the heart.

She became much alarmed for her lungs; and, at her special request, an examination of the same was instituted by auscultation and percussion. She assumed the recumbent posture. It was astonishing to find, on placing the ear to the chest, that she could make a full inspiration, expanding every cell, as well as the whole chest. Indeed the air could be distinctly heard, murmuring through the entire lung, though not so healthily in some parts as in others. When the circumstance was mentioned to her, she replied, "O, I always breathe easy in this posture, but in sitting or standing it hurts my stomach to take a long or full breath." This was sufficient evidence that the difficulty was not organic, but that it arose from mechanical derangement. When the Body-Brace was applied, she stood erect, looked somewhat amazed, drew a long breath, and said, "There now, I can *breathe!* the dragging at my stomach is gone; so is the tightness in my breast, the pain in my back and lower part of my body, and I feel like a new creature."

Here was an evident tendency to hepatization and consolidation of the lung, from the continual compression, and want of alternate expansion and contraction. This was indicated both by the sounds emitted on percussion, and by the tenderness on pressure. We advised her to beat the chest, especially the sore region, with the open hand, upon a full inspiration. At first she could hardly do this at all,

but soon found great pleasure in daily percussing the whole chest with great force. The tenderness all subsided, the shortness of breath and palpitation all left her, and the pleasing result was, a renewal of her strength. Three weeks after I called upon her, and found that she had walked about three miles that morning.

CASE 3.—Miss M——, of Philadelphia, aged nineteen, was afflicted with an affection of her lungs of three years' standing. She had taken a large quantity of medicine. Her form, which was that of figure 15, sufficiently indicated the mechanical origin of her complaints. She suffered severely from pain in the breast. This was accompanied with tightness, shortness of breath, wheezing, and a lividness of the countenance. She complained greatly of a heavy, dead pain in the right side, with weakness and sinking at the stomach. Her back was weak and distressed, and she had a sense of weight and bearing down at the base of the abdomen, with dragging in the groins. Her limbs, in addition to the most disagreeable pricking sensations, were very weak, painful and numb, and she sometimes experienced a sharp pain in the hip, on moving the same. While in the recumbent posture she breathed freely, but not at all so while sitting or standing. Palpitation of the heart, constipation and leucorrhœa, were also constant companions of her melancholy state. But as soon as the Body-Brace was properly adjusted upon her dilapidated form, she was relieved of every sensible difficulty, and, in the space of three weeks, all her complaints were entirely removed.

CASE 4.—The next remarkable proof of the good resulting from the use of the Body-Brace, is found in the case of a lady who, for three years, had been afflicted by a severe, dry, and continual cough, which was aggravated in uttering the shortest sentence, or taking the least exercise. She had much pain in the chest, and shortness of breath. Her form was drooped, and she suffered greatly from pain

and tenderness in the right side. Her stomach was contracted, and the lower abdomen large and flabby. She was afflicted with prolapsus uteri, leucorrhea, pain in the back, and weakness of the limbs. Her head also was greatly disturbed, being continually dizzy, with a roaring or sounding noise, attended by confusion of thought and loss of memory. Her mind was overspread with the most horrible gloom, and she seldom took her meals at the table, because she could not refrain from crying. Physicians decided that her complaint was very complicated, partaking of a pulmonary, hepatic and dropsical nature, and had given her the most efficient practice, by powerful medicines and counter-irritation.

Some time after this, in a letter received from her while the author was in New Haven, she writes: "When I called to consult you about my health, my lungs were in so bad a state that I could scarcely speak a word without the most violent coughing. Everything I attempted was done with extreme restlessness and reluctance, and the little duties which my family required were a great burden to me.

"My religious enjoyments and almost my confidence in God, were lost, (at least it seemed so to me). Indeed I felt that I was fast going down to the grave, and that, unless I found relief, my days would soon be numbered. At this critical juncture the application of your Body-Brace gave me immediate relief; and, so great was the change, even on the same day, that my friends were filled with astonishment, and wanted to know what had happened. My husband said that my smiles and improved looks had, of themselves, fully repaid him for the expense of the instrument. Indeed, all my symptoms, so unspeakably distressing and painful, and known only by my own unhappy experience, were as though they had not been. I feel that I cannot be sufficiently thankful, that it pleased Almighty God so to order it, that you should visit Middletown. I

can scarcely realize that my attendance on your lectures, so much against my will, at the earnest entreaties of my husband, has resulted so unexpectedly to my permanent benefit. I shall ever pray that your life and health may long be spared, so that you may go on relieving many helpless, sick and afflicted ones, as you have me."

CASE 5.—A Mr. Fuller, of Middlebury, Vt., aged nineteen, had long contracted the habit of bending forward and drooping his shoulders. He had a dry cough, and his chest was much contracted in every part, especially in its lower dimensions, the breast bone being actually turned inward. His stomach was much retracted and very tender; his lower abdomen tumid and hard; his back and limbs were very weak; his respiration short and painful, producing no expansion of the lower chest, especially of the left side, which was very sore. From the top and center of his breast, down below the stomach, he experienced a sense of tightness and pulling. His bowels were also greatly constipated. On percussing the chest, no sound was emitted from the left side; and upon auscultation or listening, no air was heard in the cells, except at the superior extremity of the lungs.

Every variety of treatment had been adopted, but all in vain. At length, some of his friends, having heard of the good effects of the Body-Brace, became deeply impressed with the conviction that his recovery depended entirely upon one of these articles. He was, accordingly, placed under the mechanical influences of this beautiful instrument, and immediately he straightened up and breathed with comparative ease. The tightness in the breast was gone; the sinking in the region of the stomach vanished, being filled up by the elevation of the organs below; the cough ceased; his back was relieved; his strength and spirits began to improve, and his countenance became cheerful. He commenced the practice of calisthenic exercises, which proved very efficient in restoring his energies

and proper attitude. He was also regular in percussing the chest in all its parts, very gently at first, with the open hand, but, as the tenderness soon disappeared, the operation was performed with great violence. He then began the respiratory exercises, and soon the lower lungs were well inflated, the ribs and abdomen expanded, and, in short, he was renovated throughout by the more healthy arrangement of the organs, and the purification of the blood.

CASE 6.—Miss B., of Springfield, Vt., a sister of the Hon. Edmund Burke, formerly Commissioner of Patents at Washington, had for years been supposed to be declining with consumption. Her strength and vivacity gradually disappeared, and her cough continued to increase. Her chest was weak, her respiration very short and labored, and her voice feeble and tremulous. She complained much of weakness and sinking at the stomach, and pain in the back. Gloomy and disconsolate, she believed that she was “fast dropping into her grave.”

As soon as the Brace was applied to this lady, she breathed easier, and was relieved of the pain and weakness in the stomach and back. Her spirits were also relieved, and she felt as though an actual weight had been removed. In two weeks from this date, she was taking regular exercise in the open air, her cough having almost entirely disappeared; and, in a word, every unpleasant feeling yielded to the mechanical influences of our novel instrumentalities for supporting the abdomen and back. She had tried many physicians, and used their remedies faithfully, but without receiving even temporary relief. And how could it be otherwise, when, as proved by the immediate effect of wearing the Brace, her difficulties were purely mechanical?

CASE 7.—A gentleman of Connecticut, aged 50 years, was seized with a severe pleuritic attack, which was wrongly treated, until at length it terminated in an almost universal adhesion of the left lung to the ribs, so that the left ribs

did not expand in inspiration, nor could he take a full breath. But, by a faithful use of the Body-Brace, the sufferings of even this painful and peculiar case were greatly relieved.

CASE 8.—An unmarried lady of Pennsylvania, aged 45, was long supposed to be in confirmed consumption. Her form was truly pitiable. Her shoulders were completely rounded, her chest contracted and retracted, the region of the stomach being so frightfully sunken, that one might hide his hand in the cavity. Her respiration was laborious and wheezing, and her body was so much bent forward, that she never sat or stood erect. One day she said to the author, in her honest, native bluntness, "I wonder, Doctor, if you have anything that could be of use to such good-for-nothing creatures as I am." Answering in the affirmative, he was promptly invited to apply his Body-Brace. Immediately after the adjustment of the instrument, she arose from her seat, and then looking around with evident surprise, she exclaimed, "Well, I declare for it, if I don't breathe from the very bottom!" She had previously breathed only with the aid of the upper lobes, and that with labor; but under the genial influences of our physiological support, she felt a liberal and full expansion of the whole chest and abdomen at every inspiration.

CASE 9.—Miss W., of Georgia, had been gradually and regularly sinking under a pulmonary affection, of which all her family had died. When the writer first saw her, she was evidently in the last stages of disease, and, of course, in a hopeless condition. Her night sweats were profuse, and all the symptoms common to such cases were attendant. She complained chiefly of great vacancy, sense of stricture, and "goneness," tenderness, pain, and oppression in the region of the stomach, with difficulty of breathing, every attempt at the same causing sharp and darting pains throughout the chest. Her extreme emaciation, and the utter hopelessness of the case, convinced us that the Brace could

be of no avail. But as her heart was set upon *trying* it, we pressed one of our hands against her kidneys, and with the other lifted the abdominal viscera upward and backward, desiring her at the same time to make a full inspiration, which to her astonishment she effected quite freely, and without any pain or cough. Her first exclamation was, "Can it be possible?" On removing the hands, a respiratory effort was accompanied by severe pain and coughing, with groaning and a feeling of fainting. It will be borne in mind that our hands were so adjusted as to secure the peculiar physiological action of the instrument. The delightful effect of this experiment upon the sufferer, could not of course fail to produce a loud call for the Brace, which was promptly applied. An expression of satisfaction immediately beamed in her countenance. "Now," said she, "I have something to breathe and to cough against. Before, everything gave way; there was no foundation. She had, however, but a short time to live; yet before her dissolution, she sent word to the author by her sister, that "language could not express the comfort derived from the Brace."

Her pastor, in a private letter to the author, writes, that "Just before she died, she exclaimed, 'O! what relief that Brace has afforded me in my sufferings.'" And then he adds, "She died with the Brace on. No one could induce her to leave it off while life lasted. She so often spoke of the relief afforded her by your Brace, that I have thought proper to make you acquainted with the fact." The happy results which would have followed the *seasonable* application of the instrument in the present case, if not obvious enough already, will certainly be made manifest by the recital of a few more facts.

CASE 10.—Mr. B., of Richmond, Va., called upon us for advice. He had for months been complaining of pain and tenderness of the chest, with great difficulty of breathing, accompanied by frequent hæmoptysis, or bleeding of the lungs; cough, hectic fever, and night sweats, being abun-

dant. He was undergoing the ordinary treatment of expectorants and issues, but evidently without the least benefit.

We expressed our fears as to the hopelessness of his case, but at the same time advised the application of the Brace, as an auxiliary, and with a view to the elevation of the diaphragm, and the erectness of the form. The instrument being snugly fitted, we left him, as we thought, numbered among the dead. But to our great surprise, two years after this, he presented himself at our office, *a well man*; so plump and sound, that we could hardly discover that he had ever been an invalid. He informed us that the bleeding at the lungs and the night sweats *disappeared with the application of the Brace*, and that from that time he had been gradually regaining his health without using any medicine.

CASE 11.—A Mr. S., of Montgomery, Ala., the conductor of a popular journal, was fast declining in health from fever and night sweats, and repeated and profuse bleeding at the lungs. Excessively disposed to drooping his shoulders, he experienced great pain, with a sense of stricture throughout the chest. He could stand but a few moments at a time. He also suffered greatly from pain in the back, and was likewise afflicted with some of the worst symptoms of dyspepsia. On being advised by his pastor, he consented to apply the Brace, and in sixteen months he was able to do more work than any other man in the establishment where he was engaged. He writes that he is still conscious of pulmonary weakness, but adds, "Let the final result be what it may, I owe my life to the timely aid of the Brace."

His disease is probably organic; and is no doubt kept at bay by the power of the Brace, in erecting the body, supporting the lungs, and thereby re-establishing respiration and the pulmonary circulation.

CASE 12.—Mr. M., of Philadelphia, had lost six or seven

children by consumption. Clinging to the last hope, he applied the Brace to his only surviving son, who was in the last stages of this disease, and who had just returned from a Southern tour for the benefit of his health. Of course his expectations were not realized. But he had the satisfaction to witness the most astonishing results of the Brace in a very hopeless and deplorable case. His son was at once relieved from pain, and the few remaining days of his life were made easy and comfortable. The use of the instrument enabled him at once to assume almost any position of body without inconvenience. Shortly after it was applied, he said: "Well, before I put on this Brace, I could not sit or stand, without an intolerable pain and weight at the lower abdomen, and great faintness at the stomach, with increased difficulty of breathing; but now I can sit, or stand, or walk with ease, and breathe like a major."

The chief object in presenting this case, is to show, by the remarkable effect upon the sufferer's feelings, in a case of confirmed consumption, the reasonableness of hoping to effect a speedy removal of the early symptoms of this terrible malady.

CASE 13.—Mrs. T., of New York, seemed to be on the verge of the grave when she consulted us about the use of the Brace. Besides complaining of a great burning tenderness in the breast, with difficult respiration, she was much emaciated, and her general symptoms were truly discouraging. She was nevertheless advised to try the Brace. Immediately after its application she began to improve. She has now gained almost incredibly in her personal appearance.

The case of this lady created the more sensation, as her medical attendant had repeatedly informed her that no human aid could save her life, and had also expressed his decided opposition to the use of the Brace.

But why multiply cases? The summing up of the whole

matter is, that whilst nothing will *cure* lungs that are greatly disorganized, yet, from the mildest to the most forlorn case, mechanical and vital or functional influences are always combined. And these mechanical influences aggravate and perpetuate the morbid state, and the use of the Brace, if it do not effect a radical cure, will yet so remove undue influences and restore quiet, as to relieve the patient, and lengthen out his life. Indeed we could not reconcile it with our conscience to omit to advise the early use of the Brace in all pulmonic predispositions.

CASE 14.—Dr. J. C. Rose, of Detroit, Mn., in a recent letter to the author, says : “My own case first led me to investigate the subject of mechanical derangements and support. Two years ago my physicians and friends had given me up as a hopeless case of consumption ; I commenced wearing one of your celebrated instruments, and I am happy to be able to say, at the present time my health is comparatively good, my cough having entirely left me. I now measure some four and a half inches larger around my chest, than when I first put on the Brace.”

CASE 15.—Charles F. Pope, Esq., in a letter, dated Washington City, also writes : “I commenced using your invaluable Body-Brace in June last, at which time I was in very feeble health, in consequence of a severe hemorrhage of the lungs, with severe hemorrhoids from the slightest irregularity of the bowels, oftentimes continuing for a week, and leaving me very feeble ; weakness in the back, and a most unpleasant sensation in the stomach, shortness of breath, and difficulty of retaining my food after eating. I was also afflicted with a severe cough, and was obliged to be very cautious, and not expose myself to the weather when it was the least unpleasant, the slightest change affecting me very seriously. The very first day I put it on, I was greatly relieved from the sinking, unpleasant sensation in the stomach. I could also walk or sit without experiencing the slightest pain in the back, and my chest felt as

if it was relieved from a heavy weight. I could breathe freely with perfect ease. In a short time my food ceased to oppress me; the hemorrhoids were relieved; and that which had caused me the greatest solicitude, viz., *bleeding at the lungs*, entirely ceased. I have not lost one drop of blood from the lungs since I commenced wearing the Brace.

So greatly have I improved, that my friends who had been absent from the city during the summer, hardly recognized me on their return. I have gained in flesh; have a good appetite, and am able to eat any food that a well and hearty man can digest. It was believed by all that my lungs were diseased, and that I must die of consumption. Such was the belief of my physicians; and I most firmly believe that many who have died of pulmonary affection, might have been restored to comparative health by the use of your Brace. I now attend regularly to my business, not losing a day, no matter how inclement the weather may be. I owe you a debt of gratitude that I feel it will never be in my power to repay.

CASE 16.—Mrs. Sarah A. Ferris, pupil of the New York Institute for the Blind, for several months declined in health, and for two months bled almost continually from the lungs. She had a cough, and a pain in her left side and breast; her strength and appetite had failed, and she was pronounced to be a hopeless case of consumption. Indeed, we were informed on our introduction to her, as she lay bleeding at the lungs on board a steamboat, that no one expected her to reach home alive. Urged by humane motives, we introduced the philosophy of the Body-Brace. The next day it was applied; and, strange as it may appear, *she never bled one drop from that hour to the present*. Her general health immediately improved, and in a few days she took stage route to Western New York. In six weeks she returned again to the institution, to the utter astonishment of all. The effect of this change was confounding and electric. The physicians had said that her case was

nopeless ; that "*rest*" was all that could be further prescribed, and yet in a *moment* she was better, *permanently* so, and by such strange means too, as often to raise the question, "*What did he do ?*"

HOW TO EXAMINE THE LUNGS.

It may be well to remark, that genuine consumption consists in, or is accompanied by an obliteration or obstruction of the air-cells, by which the system is deprived of the use of a part of the lung ; and, just in proportion as this is the case, will respiration be imperfect. If, therefore, it shall at any time appear, that a large amount of air can be inhaled, there need not be much anxiety about consumption.

There are two ways in which the air may be shut out of the lungs, namely, by disorganization and by compression. The first thing, therefore, is, to ascertain how much air can be inhaled. To do this, the patient may be placed in a recumbent posture, with the shoulders low. He should then be directed to inspire as freely as he can. If his breathing is thus greatly facilitated, so that both his sides, his chest and abdomen are all expanded, the symptoms are encouraging ; for, this shows that the shortness of breath proceeded from *compression* or mechanical derangement, and not from *disorganization*.

Another method is, for the invalid to assume the erect posture ; that is, let him stand upon his feet, and come as near as he can to the lines in Fig. 1. Then place one hand upon the small of the back, pressing hard upon each side of the spine, and the other upon the lower abdomen, pressing the same gently, but firmly toward the stomach, as if intending to crowd the whole abdomen into the breast. After the patient has thrown back his shoulders and thrust out his chest, which he will certainly do, when thus supported, direct him to make the fullest possible inspiration.

But if the symptoms be of a mixed character, and therefore unsatisfactory, resort must be had to percussion, which may be performed in various ways. In all cases, however, the chest should be bare, or nearly so. Let the operator lay the fingers of one hand flat upon the chest, and thump on them with those of the other hand. This should be carefully done upon every part of the chest, which, if in a healthy state, should emit a hollow sound throughout, of a uniform character. If in some parts the sound is hollow, and in others dead and flat, like tapping on a rotten log, it is an indication that the lungs are badly compressed. Instead of using the fingers, a piece of silver about the size of a dollar, on which to rap, may be laid upon the chest. Note also, whether one side of the chest is not more fallen in than the other.

The condition of the lungs may also be examined by *auscultation* or listening to the sounds of the chest. Of course we speak only of the most obvious phenomena. For this purpose the *stethoscope* is a favorite with many; but, for our own part, we always find the human ear preferable to this instrument.

The air, when passing into the cells of the lungs, and out of them, produces sounds, varied according to the different conditions of the lungs. If no sound is emitted, then of course, no air enters or departs. If therefore, on placing the ear flat upon every portion of the chest, and close to it, any part emits no sound, then that part is badly compressed or disorganized. Very commonly, mechanical derangement and disorganization exist together. However, as before stated, we have now nothing to do with the disorganized state. Our present object is to counteract *mechanical derangement*,—to restore and confirm respiration by cultivation.

The cause of compression or mechanical derangement of the lungs, is usually found in a departure from the erect posture, and the consequent relaxation of the abdominal

and dorsal muscles. It should therefore be borne in mind, that the resumption of this posture, and the tense condition of these muscles, either with or without the aid of the Body-Brace, is always pre-supposed in giving directions for the expansion of the chest and lungs.

PROTECTING THE LUNGS.

WHEN your lungs are diseased, or when there is reason to apprehend the presence or approach of any disease of the same, do not shut yourself up in the house through fear of taking cold, or with the hope of avoiding exciting causes. For, to shun the cold, and thereby render yourself unable to bear the opening of a door, is the worst thing you can do. Therefore, take care that you do not give way to the cold days, but protecting your body with flannel, use them as hardeners for the wintry blast.

Do not cover your mouth with a thick veil or napkin. It makes the air impure, and enfeebles the lungs; unless, indeed, your lungs are very irritable, in which case the cold air may be somewhat tempered.

Exercise as freely in the open air as you would if you were well, but do not forget that you are an invalid. Be careful to labor only according to your strength, and be doubly sure in all your doings to preserve a proper attitude.

MORBID EFFECTS OF RELAXATION UPON THE HEART AND BRAIN.

Palpitation or Fluttering, Sinking or Falling of the Heart; Fullness, Tightness, and Dizziness of the Head; Confusion of Ideas, and Loss of Memory.

It will be recollected that the heart is retained in its natural state by ligaments, arteries, and veins, as well as by the diaphragm, from which it derives its chief support.

But now that the diaphragm is dragged down from its proper position, the heart also, with which it is firmly connected at its base, must necessarily descend, oppressing and irritating the nerves of organic life that preside over its involuntary action, and producing every form of palpitation, or "fluttering," as well as "sinking" or "falling" of the heart. Indeed it often happens, that this increased action, or beating of the heart, is found sufficiently low down to indicate a positive change in its locality; and it will be borne in mind, that even as long ago as the time of Elihu, we find a distinct reference to this peculiar situation of the heart:—"At this also my heart *trembleth*, and is *moved out of its place*." Doubtless, the physical frame of this good man was greatly relaxed, by continual fasting and watching, and his heart actually sunken and in great agitation. Note, too, with what hasty and firm strokes the human heart beats at the invasion of individual rights, making the tired muscle ache with the exertion of its giant force, as it sends the blood to the very surface of the body. See also how at times it leaps for joy. Behold it, on the other hand, in sorrowful and almost pulseless depression; and then say, whether, if such comparatively trifling *external* circumstances may, through the mind, produce such modifications in its action, *internal* circumstances of a mechanical nature, bearing directly on the heart and putting all its fastenings or moorings upon the stretch, may not be expected to superinduce very important modifications in its *position*.

When palpitation of the heart is once originated, no matter how, a multitude of effects or results will naturally follow. Prominent among these is an increase in the size and strength of the organ. This morbid condition of the heart is caused by the agitation of its fibers, and may be illustrated by the fact, that the limbs most used by the farmer, blacksmith and dancer, become, from the natural stimulus of exercise, very large and strong. This en-

largement, though but a mere effect or symptom, will eventually become an active and perpetuating cause of disease.

It may be well to remark in this place, that whenever palpitation of the heart is produced by an inflammatory affection of the spine, which may at all times be ascertained by smart pressure on the spinal column, the ordinary routine of treatment, adopted by the profession, should at once be resorted to, though such treatment should not be too long continued. If the relief given is not radical, or likely to prove so in a very short time, it may be proper to use other means; for, partial relief is not always to be regarded as evidence, that the further prosecution of the treatment is advisable. It may not be possible for such treatment to do more than relieve the acute and aggravating symptoms. The remaining effects may be chronic; and they may also require that the body should be supported by the elevation of the abdominal organs.

Another serious difficulty arising from palpitation of the heart, has its bearing upon the lungs. The irregular and unnatural action of this state, may induce a derangement of the valves which admit the passage of the blood from one room of the heart to another. For instance, the arteries send the blood to the lungs from the right side of the heart, and the pulmonary veins carry it back to the left side, from whence it is sent over the whole system. Now, if the valve that defends the passage of the blood from the first to the second room in the left side of the heart does not act, or becomes bony or gristly, of course the blood will be obstructed in its passage from the lungs through the heart, and so on throughout the system. The blood will, therefore, accumulate in the pulmonary veins, and becoming gorged in the lungs, will inflame and produce in them a sense of suffocation, the complexion of the patient being blue, the lips livid, and the face flushed. To free themselves from this feverish state, the lungs secrete a thick, tough mucus, which, together with a troublesome cough, leads the

patient to conclude that the difficulty is a primary disease of the lungs. Hence the importance of being able to determine at the outset, whether the disease is symptomatic,—*the mere effect of a remote mechanical cause, and calling only for mechanical aid.*

The vessels of the heart divide into those which run into the head and arms, and those which supply the lower trunk and extremities. The distance from the starting point to the head being shorter than the other, an increase of action in the heart must send an unusual quantity of blood to the brain; and, as the brain at all times so completely fills the cavity of the skull, that even the courses of the blood-vessels are imprinted upon it, this surcharge of blood must be attended with painful and injurious results. The cranium being formed of bone, and therefore inelastic, and the blood being thus forcibly ejected into the delicate organs that already fill the cavity, of course the nerves of seeing, hearing, tasting, smelling, and feeling, must undergo severe compression. A sense of fullness and tightness will also be experienced in the head. Persons of nervous temperament will in cases like these, find a recumbent posture uniformly attended with head-ache.

Such patients will often, after reaching or stooping, carrying a weight, or ascending a hill or flight of stairs, suddenly complain of dizziness, blindness, or confused vision, as well as unnatural and frightful objects. The patient will reel and stagger, and seize hold upon the nearest object for support, complaining at the same time of a sensation of water in the head, and of ringing in the ears, together with a confusion of ideas and loss of memory, the attitude being fixed, and the head firmly clasped with both hands. When these symptoms have passed over, the patient will speak of having felt a creeping sensation traveling up the spine, entering the brain, and spreading out in all directions. Sometimes this affection passes off quietly, the patient moving gently and looking around as

if quite surprised at finding himself alive; at other times, it is immediately succeeded by bursts of tears and sobs, the patient not being able to assign any reason therefor. On some occasions the patient will scream, seem delirious, and talk incoherently. Persons thus afflicted, will be often telling that life is a burden, and that they have no comfort. They are ever looking for death, and yet are filled with terror at its approach.

From the foregoing facts, we may learn that the probable cause of nervous troubles is a general or local muscular relaxation, not an affection of the truncal organs; and, also, that such diseases do not exist in the imagination or fancy, nor depend upon a strong or weak mind. They cannot be controlled by the most powerful intellectual influences. We might as well talk tactics to the wind, as expect the mind to curb or govern nervous affections brought on by mechanical causes. What then shall we say to those who address such cruel words as these to the sufferer: "O, you are only hysterical! You will get better by and by;" unmindful of the fact, that when human nature is thus bowed down, it more especially needs the kind look, the sympathizing voice, and the supporting arm.

USE OF THE BODY-BRACE FOR PALPITATION OF THE HEART.

CASE 1.—A young lady of Pittsburgh, Pa., who had been induced to apply the Body-Brace, obtained immediate relief from the most violent palpitation and distressing aches and pains, to which, it would seem, the human heart is liable. The palpitation was unremitting, and it was aggravated by the slightest exercise or excitement of the body or mind. The character and extent of her cardiac affections led her practitioner to fear an ossification of the valves, or some other organic derangement, producing a

mechanical interruption of the sensible functions of the heart.

The physician in attendance on the case, who had but very little confidence in the adoption of mechanical support, and who was therefore greatly surprised at the prompt relief which was afforded by the Brace, very courteously permitted us to say, that he considered this the most extensive and marked case of radical and organic affection of the heart that he had ever seen!

CASE 2.—In this instance the palpitation, like a wild tumult within the chest, extended almost to suffocation; and no excitement of body or mind produced any change in the symptoms. They had evidently reached a critical point; and seemed so to pervade the breast as to bid defiance, alike to aggravating circumstances and remedial efforts. It was finally resolved that, by way of *experiment*, the Body-Brace should be immediately applied; and, no one could have been otherwise than astonished at the marvelous result. The relief procured was complete; and the case excited the attention of the thoughtful and afflicted throughout the neighborhood.

CASE 3.—A young lady, in the State of Massachusetts, who was the subject of a long-standing disease of the heart, derived essential benefit from supporting the abdomen and back. The palpitation or “fluttering” sensation, and the pain she experienced in taking a moderate walk along the road, or ascending a flight of stairs, were so intense as frequently to induce a paroxysm, amounting to a fit of *angina pectoris*, a certain spasmodic affection of the heart. She would be prostrated, and agonizingly agitated. Indeed, she was in constant apprehension of death from these attacks. Every variety and extent of hospital and private treatment for spinal irritation had been tried for her relief, but without success. And yet, in one moment after the Body-Brace was applied, she was so relieved as to be able to traverse the city, and ascend and descend long

flights of stairs without any unpleasant effects, or as she expressed it, without having one of her "*breathing spells*." In short, within five days after she was fitted to the instrument, she returned to her accustomed employment.

CASE 4.—"About a year ago," says Dr. Van Deusen, of Detroit, Michigan, "I was attacked in a very violent manner with palpitation of the heart, and made use of various remedies, but all to no purpose. I became quite alarmed about myself. I was induced to try your Body-Braee, and in less than four weeks after I commenced wearing this extraordinary contrivance, I considered myself entirely well, and have since had no return of the palpitation, or of other unpleasant feelings."

But it is useless to multiply cases. Yet still, when we have them at hand, there is a great inducement to bring them forward; especially when we see so much use made of anti-spasmodics or anodynes, in fruitless efforts to relieve this common malady. Perhaps we might as well say, that we long to see universally adopted, *our* more excellent way.

MORBID EFFECTS OF RELAXATION UPON THE STOMACH, LIVER, AND SPLEEN.

Dyspepsia—Liver Complaint—Chronic Inflammation of the Spleen.

THE stomach is now hanging by its two ends, entirely unsupported. The nerves that preside over its functions being made sensible of this unnatural position of the organ, are soon thrown off their balance, as illustrated by the fact, that when a person who is very systematic in all his arrangements, happens to find his papers suddenly transposed, by some playful little child, he is peevish and irritable, and often manifests the same by hurried movements and petulant remarks. And, if the noble and rational

powers of man can thus be affected by so slight a cause, how much more likely is it that his involuntary and material part will be affected by a similar derangement.

It is very generally known, that the digestive power of the stomach lies in a certain fluid contained therein, called the gastric juice ; and that this fluid is under the power or direction of the nerves of organic life. When this fluid is healthy, it makes an immediate attack upon everything which is taken into the stomach. But the nerves may be come torpid and cease to supply or superintend the gastric juice. The consequence is, that the stomach becomes dry, and the food which is forced into it, lies there undigested, the same as it would in any other bag. It soon ferments, producing belchings and a very offensive breath, as well as a disagreeable taste in the mouth. Or, it may be that a morbid heating fluid will be secreted, irritating the extremities of the sympathetic nerves as soon as it flows over them, and thereby producing a burning pain in the stomach. In the torpid state, the stomach will retain almost any kind of food, the patient complaining chiefly of great weight and distress, whilst in the irritable state, it is often the case, that anything put into it is rejected forthwith, even though the sufferer should be upon the point of starvation.

The present *dangling* condition of the stomach, also enables us to account for those peculiar sensations of "vacancy" and "goneness," so common to the dyspeptic. And hence it is, that persons afflicted with dyspepsia, are so often compelled to lie down immediately after eating ; the relief afforded by the recumbent posture, under such circumstances, being obvious to every one, and quite enough to throw considerable light upon that mysterious, yet oft-repeated declaration of those who have *graduated*, namely, that they are thus enabled to "*enjoy* a sort of *comfortable misery*."

The fact should not be overlooked, that persons afflicted

with dyspepsia, may complain either of a voracious appetite or of no appetite at all. Still, *whatever* is eaten, lies heavily on the stomach, producing a sense of "flatness," or "weight," or "load," or "burning pain," which is often insufferable. These unpleasant sensations are accompanied with a belching of gas, or the throwing off of a hot acid fluid, that seems almost to skin the throat and melt the teeth of the invalid.

Seeing then, the legitimate results of a relaxation of the abdominal muscles; or, in other words, of the habitual deviation from the erect posture, and the consequent changes in the mechanical relations of the vital organs, let us seriously reflect whether dyspepsia, or other maladies thus provoked, can be eradicated by other than mechanical means?

Dyspepsia may indeed result from causes requiring constitutional treatment. But when it arises from a *mechanical* cause, which is almost invariably the case, as shown by the fact that every confirmed dyspeptic is of the *drooping* form, is it *possible*, we ask, for internal remedies to effect a cure?

The Liver.—It will be recollected that the liver is pressed upon in all parts by the ribs, lungs, and bowels. Its function is to receive the returning blood, from which it draws out or secretes an element called bile. This secretion, by virtue of surrounding pressure, which it relies upon instead of muscular tissue, is thrown into the first bowel to assist in digestion. But now that the stimulus of pressure is removed by morbid relaxation, the liver ceases to perform its natural functions; and, being very heavy, it must, in its present unsupported condition, make large demands upon the ligaments connecting it with the diaphragm; which, by such unnatural pulling, becomes almost inverted. This dragging upon the diaphragm causes the sufferer to sit or stand with his hand upon his right side. It also disposes him to lean in that direction.

The effect upon the system, of so great a change in the mechanical relations of this organ,—a change from *support* to *suspension*, has induced the bestowal of a fearful amount of medication upon so-called diseases of the liver. We would not, however, be understood to favor the view that these mechanical difficulties may not exist long enough to induce other symptoms, resulting in the establishment of a compound ailment, requiring both constitutional and mechanical treatment. But even in such cases, common sense teaches us that the chief reliance for a radical cure, is upon *mechanical* aid, that being best adapted to remove the *cause* of the complicated ailment.

It is very common for patients to say, that having tried everything, and employed the best of physicians, they still find themselves afflicted with pains in the region of the stomach, liver and spleen; that having been scarified or leeches in the locality of the pain, and, in short, having submitted to the whole routine of popular, or approved, or perhaps it would be better to say, “regular” treatment,—still, notwithstanding the commotion on the *outside*, they are no better *within*;—that, as soon as the blisters and sores were removed, they were made fully sensible of their dyspeptic and other affections.

And thus it is, that chronic invalids are so long convalescent,—for ever “getting better,” and feeling “more comfortable,” but—never *well*! “Verily, there is a way that seemeth right unto a man, but the end thereof is death”! As well might it be expected to resuscitate a dead man, by pouring medicine into his coffin, as to attempt to restore a positive mechanical derangement of the system, by internal remedies.

In the examination of invalids, it is well to keep in view, that the patient should be *erect*, his chest well developed, his breast and stomach full, and his abdomen firm and elastic. This erect position of the body brings all the organs upward, and supports the upper portion of the ab-

domen as much as the lower. But the form of most people is exactly the reverse. We generally find the patient bending forward, as in Fig. 2, his stomach and breast retracted and sunken, the upper abdomen flat and soft, the waist small, and the lower abdomen comparatively large and quite hard. In short, before *constitutional* treatment is resorted to, there should be no doubt as to whether the lower organs have fallen away, and subjected those above to an unnatural position.

Invalids should be urgently pressed for a description of their feelings. The *language of sensation* is of infinite importance in determining the nature of chronic disease. Take, for instance, the following, by way of illustration. After several unsuccessful attempts to ascertain the peculiar sensations of a distinguished lady in a case of supposed *live complaint*, she replied, "Why, doctor, it feels just as though it was hanging from where it is hitched!" This was certainly quaint, but it told the story, and enabled us promptly to decide that the affection was purely mechanical.

The Spleen.—Next in the order of remark comes the spleen. It will be remembered that it is situated in the left side, under the short ribs. Its displacement, as well as that of its suspended associates, causes a tension of the ligaments connecting it with the diaphragm. This organ is accordingly much disturbed, being thereby placed between two pulling forces,—a position eminently calculated to produce chronic or acute inflammation in the several organs concerned. The spleen is the seat of many of those chronic difficulties which have been so long and unsuccessfully treated by the profession as primary diseases of the organ, under the name of *affections of the spleen*. The more common of these affections are lameness and tenderness, with a "dead," "dull," "deep" and constant pain in the left side, for which cuppings, leechings, issues, and every other conceivable counter-irritation have been unsuccessfully ap-

plied. Now, considering that the ordinary treatment is in all respects adapted to *inflammatory* affections of the organ, and therefore to the speedy extirpation of the malady, how happens it that *temporary* relief,—if indeed the patient is fortunate enough to obtain relief at all,—is the common result of these remedial efforts? Does it not show that we have misapprehended the symptoms; or, however humiliating may be the confession, that we are ignorant of the *mechanical* pathology of this affection? It is generally conceded that “affections of the spleen” have been more unsuccessfully treated by the profession than those of any other organ. Even Dr. Dewees, himself, after admitting that the peculiar sensations of the dyspeptic, such as “goneness,” “vacancy,” “weight”, &c., are always attended with a pain in the left side, in the vicinity of the spleen, frankly acknowledges that he cannot account for the fact; whereas, from the view here taken, the reason is obvious enough; for, from both the upper and lower surface of the spleen, there is a hanging or suspension, as in the case of the liver and stomach, caused by the descent of the bowels,—thus placing the organ in such an unnatural position as *must* induce more or less pain in the side where it is located.

A strong proof of the correctness of our position respecting the descent of the bowels and the consequent effects of the same, is, that whenever the foregoing symptoms exist, it will be found, that by placing one hand upon the hollow of the back, and the other on the lower abdomen, so as to raise it gently both upward and backward, *the patient will involuntarily straighten up, and find relief*; whereas, if we should gravely take hold of his hand, carefully feel his pulse, look at his tongue, examine his skin, inquire about his appetite and the state of his bowels, we should only find a multitude of diseases to contend against, and be forced to deal out a vast number of internal remedies; so true is it, that the *effect* becomes in turn, the active

cause, engendering an endless variety of the most painful chronic affections.

USE OF THE BODY-BRACE FOR DYSPEPSIA.

CASE 1.—Mr. C. of Philadelphia, was dyspeptic from boyhood. When first afflicted with the malady, his business was that of a printer; but at the approach of manhood, he embarked in another occupation, hoping to improve his health. Unfortunately, however, his new vocation was not adapted to this end, and at the age of thirty he was altogether unable to attend to business. So severely was he afflicted with dyspepsia, that even in early life, it often seemed that his unspeakable distress must suddenly put an end to his life. Naturally straight, but made crooked by early habits, his shoulders had become humped and drooped, his chest contracted, and his stomach sunken and retracted, if not entirely gone,—for the uniform and prompt rejection of food supposed to be deposited therein, seemed almost to indicate that there was no longer any receptacle for it. His abdomen, also, was soft and flat in the upper region, and hard and tumid at its base. His extremities were cold, and he had scarcely any flesh upon his bones. Extreme tenderness, with sensations of “pulling” and “tightness” were also felt at both the stomach and lower abdomen. His only comfortable position was that of lounging upon the sofa. It would seem that all this was too much for endurance, and yet we are compelled to add to the list of his woes, the most pitiable gloom and mental depression.

Constipated, and severely troubled with piles, unwilling to see or converse with his friends, excessively irritable and petulant, answering only in monosyllables to interrogatories about his complaints, and quite disgusted with the remedial art, he was just about graduating as a confirmed dyspeptic, when *our* views of mechanical pathology were

allowed, by his friends, to be worthy of consideration. But, "better late than never." In one moment after the Brace was applied, he looked around with evident surprise, and then exclaimed, "That *does* touch the spot!" Desirous of visiting a friend immediately, he was permitted to wear the instrument out of the city for a short time. A month after this he returned. His cheerful countenance and brilliant eye, and his courtesy and social manners, were in strong contrast with his recent deplorable situation. He drew his chair towards us and said:—"Sir, I have the pleasure of bearing testimony to the efficacy of your Brace. I have shown it to many persons, and it has been greatly admired. Many an invalid wanted to take it from me; but I could not spare it. It has improved my appetite, increased my strength, diminished the tenderness and irritability of my stomach, and almost entirely removed the enlarged, tumid state of the lower abdomen."

CASE 2.—Mrs. T. of Pennsylvania, who was also afflicted with dyspepsia for more than eighteen months, was immediately benefited by the use of the Brace. Her form had also become drooping, as, indeed, we contend is the case with all dyspeptics. Her chest was retracted, and her stomach greatly depressed, so much so, that she often said it was "gone;" the "pulling" at the stomach would make her feel as though she was about to faint, whenever the sitting posture was substituted for that of the recumbent, the latter being the only one in which she was free from distress after eating. In this case, the laxity of the abdominal fibers was so great that one could grasp with ease a handful of the integuments. When the instrument was first applied, she stood upon her feet, and commenced walking about the room as cautiously as though she were afraid of falling to pieces, but she soon stood erect, and exclaimed, "Why, Doctor, the place where I used to have my stomach, is all filled up again." She then sat down, opened a cheerful conversation at the fireside, and to the great astonish-

ment of herself and friends, discovered, that, whereas for several months she had not conversed with any one more than five minutes at a time, she had actually been talking steadily for three quarters of an hour !

Her appetite also began to improve, the load or weight at the stomach was no longer felt ; instead of being confined to two or three articles of food, she was soon enabled to eat, without inconvenience, almost anything she desired, and that, too, in the standing posture. Being now able to sit up during the process of digestion, she is also capable of physical exercise in the open air. In short, to speak with much significance, her husband said to me, some time after this, " Doctor, we have very different times, now, at our house."

CASE 3.—The next case is that of a young man in the city of New York, who was gradually declining, and who had become thoroughly dyspeptic. He had no confidence in himself or his friends. He could look nobody in the face. Worthless in his own estimation, and despairing of relief, he was only interested, as he quaintly observed, in " seeing whether what he ate went to the right place." His voice was effeminate, tremulous, and hesitating. He usually sat, either lounging upon one hip, or doubled up so as to prevent the disagreeable sensation of vacancy at the stomach.

The Brace was applied. His voice improved before he left the room. In a few days, he called upon me to say that he could eat like other people, and that his bowels, which had been difficult to move with medicine, were now " perfectly regular."

CASE 4.—Mr. M. R. Eggleton, of 38 Catherine-street, New York, thus concludes an interesting letter :—

" Such has been my relief from the use of your Brace, that I cannot refrain from asking you to receive and promulgate my testimony to the world. For several years I have been the most miserable creature that ever lived,

having been afflicted at once with indigestion, costiveness, weakness, burning at my stomach, spitting up my food, or groaning under the retainure of it, together with great weakness at my sides, breast, and back, and a nervousness that perfectly unmanned me. My mind, also, was dark and distressed, and all was woe, horror, and despair. For years I did every thing that could be done—yes, *every thing*—without avail. But since the application of your Brace, I have been happy, my mind being clear and cheerful, strength improved, bowels regular, digestion good, stomach strong, etc. Indeed, I am radically cured; and I beg all of sedentary habits, who sit much, or stoop, or complain of any form of dyspepsia, or weakness of body, to try your Brace in preference to any other.”

CASE 5.—“For six months previous to wearing your Brace,” remarks Mr. R. P. Price, of this city, “I was perfectly feeble and miserable. Indigestion, with all its attendants, such as heartburn, rising of food, pain and sense of burning and “*goneness*” in the stomach, preyed upon me, until I had actually grown weary of life. My back and limbs were exceedingly weak, and all gentle exercise was followed by great fatigue. Since the use of your Brace my stomach has been relieved of its former troubles, my back and limbs are strong, my flesh, and above all, my spirits, have returned, and nature and society wear a new face to me. I feel that there are *thousands* similarly afflicted, whom medicine cannot relieve, and who must live miserably, or die, except they use your Brace; and hence this public testimonial in favor of its wonderful powers.”

CASE 6.—Mr. Lewis J. Magnussen of this city, also says:—“Previously to calling on you, I was making arrangements to depart for Sweden, for my health, so terribly was I afflicted with dyspepsia, debility, and dreadful gloom and lowness of spirits. I had no alvine evacuations, without the use of the most powerful medicines; my abdomen

was always tumid, and my business energy and social enjoyment were gone. I was unable to take exercise, and my appetite was gone. I had tried all the ordinary means of relief, but without much avail. On trial of your Brace, I found myself immediately better. In three hours after, I had a regular evacuation, without the aid of medicine. My strength and spirits also returned, and I am now almost entirely restored to my former state of health."

CASE 7.—Mr. George Fisher of Raleigh, N. C., writes thus :—" When I called on you in this city, in January last, I told you that I had been for years very much afflicted with dyspepsia, weakness of the back and breast, and a most distressing cough, with difficulty of breathing, together with great debility of the whole system. I could not eat anything without the most disagreeable sensations ; and at times I suffered the deepest depression of spirits, which rendered me unfit for business or enjoyment of any kind.

You advised me to try one of your Body-Braces, which, you said, had been often applied in similar cases by others with great success. I did so, and found great relief, in a few days after ; and now I am happy to inform you that I can eat just what I please, without any inconvenience whatever ; my cough has nearly left me ; my back and breast pains are entirely removed ; my dyspepsia cured ; and my general health is improving. I am perfectly satisfied that, by persevering a little longer in the use of the Brace, I shall soon be restored to as sound health and spirits as I ever enjoyed. I do not think I should be extravagant in saying, that from the first to the last, previous to the application of the Brace, I had expended, for various remedies to heal my distressing and multiplied maladies, at least one thousand dollars, without deriving any benefit from the same. But the application of your Body-Brace, by affording mechanical support at the proper place, to a long afflicted and debilitated system, has accomplished

the object. Therefore, as an act of justice to a public benefactor, and for the benefit of the afflicted, I most cheerfully furnish this testimonial."

CASE 8.—This is an extract from a letter of Mr. Robert Gibbons, of Middletown, Ct. :—"I have now worn your Body-Brace for four months, and find myself improving constantly from its use. For a long time before I applied it, my health had begun to fail, owing to the unfavorable attitude which my daily avocation required me to assume. But during the year preceding my application to you, I suffered very much from dyspeptic symptoms, accompanied with great weakness of the back, and occasional aching sensations in that region, together with a sense of weight at the stomach, as if some one was pulling me down. I also suffered from derangement of the liver, as well as from a constant looseness of the bowels, which kept my system in a feeble state; great lassitude, and an inability to attend to my ordinary business being likewise experienced; so that, for nearly half my time, I was unable to labor. My food likewise distressed me for a long time after meals. But now I feel like a different person. All these symptoms have disappeared, and I am able to be constant in my attention to business. I had tried medicines, and a variety of supporters, without relief. But from the peculiar construction of your instrument, and the relief already obtained from the same, I anticipate and hope for a perfect and permanent cure."

CASE 9.—Mr. James J. Butler, of Cincinnati, in a letter some time since received by the Author, thus expresses himself on this subject:—"Having, as I believe, received very essential benefit by the use of your Body-Brace, in a case of dyspepsia of long standing and very aggravated character, I feel it a duty I owe to my fellow-men, as well as an act of simple justice to you, to state the particulars of my case, in hopes that others may, in like manner, get rid of this troublesome and annoying complaint. I have

had this disease, more or less, for ten years past; have spared neither pains nor expense in trying the thousand and one panaceas with which the nostrum venders have afflicted the 'dear people'; have traveled, dieted, and ate brown bread, until my internal organs have been punished severely, and all without success. For the last eight years I have been unable to satisfy the reasonable demands of appetite even with simple food, without great suffering, severe oppression, and consequent gloominess of mind.

"During the months of August and September last I had four successive attacks of this disease, all of which confined me to my bed. My physician had great difficulty in getting medicine to act, so torpid was the state of the liver. The last attack was particularly severe, so much so, that my physician felt it necessary to visit me four times a day; and, after my recovery, told me that he was very fearful it would have terminated fatally. Soon after I was convalescent, I called upon you, and was fitted to one of your Body-Braces. I soon found that my food lay easy on my stomach. I ate heartily without oppression. I attributed this more to the medicine than the Brace, as it was a remedy which had the reputation of having performed entire cures of long standing. However, I was soon undeceived; for having left off taking the medicine, and continuing the use of the Brace *as an experiment*, I still found that my food digested well. Shortly after this I started on a long business tour; found I needed no medicine; could eat of the richest pastry, and indulge with impunity in all the luxuries of a well-filled hotel table. In short, I could eat any and every thing that my fancy dictated, which, had I attempted to do before the application of the Brace, I should have been on a sick, if not a dying bed. All this has been accomplished in one month, *either by magic, or by your Body-Brace*; and, as I have not to my knowledge called any soothsayer to my aid, I must believe that the Brace, and the Brace *only*, has done thus much for me. I may be self-

deceived, but if so, it is a happy self-deception, which I hope I may not soon be called to give up.

"I cannot but return my grateful thanks to you for your invention, and sincerely wish you abundant success in your efforts to relieve human suffering; and, it is my humble wish, that your purse may be as well filled with the *substantial*, as my heart is with gratitude, to an All-wise Providence for having sent you among us."

USE OF THE BODY-BRACE FOR AFFECTIONS OF THE LIVER.

CASE 1.—Mrs. L., of Philadelphia, had been twelve years under treatment of a very active character for an affection of the liver. She was salivated several times, and bled once a month. Her stomach was much retracted, and her whole form had become drooping and relaxed. During the whole of this long term of years she had been complaining of pains in the right side and shoulder. These, together with other usual symptoms, indicated, as was supposed, liver complaint, for which she had been zealously treated.

It is worthy of remark, that this lady always insisted upon it, that her disease was not *liver complaint*; and that in reply to her physician who playfully asked on one occasion what *she* knew about the matter, she said that her liver did not feel *sick*; it only seemed to be *hanging out of its place*. Sometimes there would be great tenderness of the liver, when she would be compelled to lean toward the affected side, in order to obtain relief by pressure, a plain indication that there was no primary inflammation of the organ, either acute or chronic; the pain being manifestly occasioned by the tension of the ligaments connecting the diaphragm with the convex surface of the liver, which accounts for the fact, that instead of a severe, darting, pungent, or acute pain, the patient experienced those "drag

ging," "hanging," "pulling," and "weighty" sensations, with occasional tenderness of the organ.

On placing our hands upon the lower abdomen and back, and giving the abdominal mass an elevation toward the stomach, she was greatly surprised to find that the sensation of dragging was, for the time being, entirely removed, and her side free from pain. It can hardly be necessary to add, that when the Brace was applied as a permanent substitute for this experiment with the hand, she was at once enabled to walk about with comfort, notwithstanding the previous long confinement to her room.

This is a just representation of a majority of the cases of common liver complaint; requiring, but seldom if ever receiving, *mechanical* treatment, they march on in scornful triumph, regardless alike of demurring friends, and the potent drugs of the apothecary.

CASE 2.—A lady of Connecticut, who was fast sinking into the grave, and unable to walk, had for many years complained of an incessant cough, pain in the stomach and back, swelling of the feet and legs, and extreme tenderness in the right side. She was nervous and gloomy, and had become considerably deformed. In short, her whole trun-cal relations were deranged. A number of physicians, as usual in such aggravated ailments, had, at different times, attended the case, each in his turn arriving at a different conclusion about the nature of the disease. One held that she was afflicted with *dropsy*; another with *dyspepsia*; others *consumption*, spinal disease, &c.; until, at length, a *consultation* declared in favor of *liver complaint*.

This "differing of the doctors" is easily explained by the fact, that when chronic affections are mechanically induced, the symptoms of general muscular laxity of the system are more or less connected with the signs of the varied forms of disease resulting therefrom. In other words, *habitual* deviation from the erect posture, and the consequent morbid relaxation of the muscular system, the descent of the

bowels, and the ruinous effects of the same—all, are constantly producing the combined symptoms of dropsy, dyspepsia, consumption, spinal disease, liver complaint, &c. This fact also shows how easy it is to be mistaken, in supposing that these maladies, especially when found in their combined force upon a single individual, must necessarily be referred to a mysterious Providence; whereas, in nine cases out of ten, the invalid is actually receiving “the wages of sin,” in accordance with the most positive and unmistakable declarations of Scripture.

Like as in the preceding case, the pain in the side which this patient experienced, instead of being hot and painful to the touch, was described as a dull, dead, heavy, hanging, dragging or pulling sensation, and was relieved by pressure. At her request, the Brace was applied; and, incredible as it may appear, in *one* minute, she arose with peace and tranquillity in her countenance, took a full inspiration, said she could breathe freely, and now that her stomach was supported, she could also speak without pain; that her back was better, and that the weakness and pain in her side had entirely disappeared! She left the house, feeling like a new being, and the next day rode forty miles without inconvenience. Surely with reason did her neighbors wonder at the sudden change in her health.

MORBID EFFECTS OF RELAXATION UPON THE RECTUM OR LARGE BOWEL.

*Constipation, Hemorrhoids or Piles, and Prolapsus Ani, or
Protrusion of the Bowel.*

THE small bowels, instead of being properly elevated, now rest with great force on that part of the back bone which juts forward, and where the large bowel dips down into the pelvic or lower cavity, thus imposing a mechanical obstruction to the regular descent of the feces, and pro-

ducing an accumulation of alvine matter. The natural secretions of the bowel are also absorbed by the hard and heated condition of the mass within, which is constantly irritating the inner membrane and nerves.

In a natural and healthy condition of the body, the contents of the abdomen, whenever we step or fall, descend upon the elastic muscles, which instantly distend, and then in like manner re-act, throwing themselves and the superincumbent bowels back to their former position. This any one can test by placing his hand upon the lower abdomen, and stepping heavily. He will feel the vibration or reaction of which we speak.

Now two purposes are subserved by this arrangement. It tends to preserve the organs from injurious contact, by giving them, always, a gentle movement, and it stimulates the bowels to motion and secretion. But how different is the condition of the bowels, when they rest upon the lower abdomen and the bones in that vicinity. Lying below the axis of muscular contraction, and being perfectly inert and totally deprived of their usual facilities for action, they must often press downward with great force. The most obstinate cases of costiveness are thus produced. The whole intestinal tube becomes preternaturally distended, causing bad breath, loss of appetite, and otherwise deranging the stomach. The circulation of the blood is also mechanically obstructed, inducing stupor, sleepiness, ennui, and a host of other symptoms. At length, nature rouses herself to throw off the foreign mass by which she is thus opposed. But she labors under great disadvantages in the performance of this extraordinary task. The bowel is very tender and dry, and so are its contents. Yet still, by the exercise of unusual strength and force, the work is accomplished. But what is the effect? Why, the inner membrane being naturally much larger than the outer, and lying in folds, the dry mass pushes these folds before it, and leaves them at the outlet, where they are held by the

contraction of the sphincter muscle, which covers the aperture, until hard and very sore tumors are formed upon the parts. At first, the membrane may be drawn back before the sphincter muscle contracts upon it; but it soon loses its tone, becomes congested and relaxed, and prolapsed at every stool, by the slightest straining. This painful state is greatly promoted by the pressure from above upon the lower bowel, continually bearing it down and increasing the tendency to its inversion. These distressing stools are eventually succeeded by discharges of blood, when we have as genuine a case of piles as can be imagined, which, by the way, is of itself a most distressing malady, though it seldom exists without constipation, as may readily be inferred from the preceding remark. Indeed, no less than eight out of every ten cases of piles, are induced by constipation of the bowels.

Now, is it possible for *medicine* of any kind to effect anything more than temporary relief in such afflictions as these, without first restoring the mechanism of the disordered parts? Surely not. Let us then see to it, that the only rational mode of treating these vexatious and distressing maladies, namely, the elevation and support of the viscera by judicious mechanical means, is at once adopted.

USE OF THE BODY-BRACE FOR CONSTIPATION OF THE BOWELS.

CASE 1.—The following, from a minister in the employ of the American Home Missionary Society, dated Elk Grove, Cook County, Ill., will be read with pleasure by all interested in the relief of human suffering.

“Very recently, when my wife was almost despairing of help, in a case of extreme and protracted constipation, Mr. Trippe, an agent of yours, from Chicago, by the direction of our friend and physician, Dr. T. F. Miner, called on us with your Body-Brace, of which, by information, I had previously entertained a good opinion. . . . She has

now worn the instrument about two weeks, and the relief it has given her is quite unmistakable and marvelous. But one day has passed without a movement of the bowels once or twice in the day; though previously, for months, her passages had not averaged much if any more than *one in a week*, except under the occasional operation of very active medicines. These, for some time past, she had rarely used, and her case was fast assuming a desperate form. But now, her bowels are apparently improving in activity, *wholly without medicine*. She had recently been so prostrated by pain and emaciation, as to be confined to her bed, and had been obliged to resort to active purges, however unpromising they appeared in respect to the future. On the morning of the day in which she put on the Brace, she had an operation from medicine, and from past experience, she had every reason to apprehend that several days, probably a week or more, would elapse before she had another, unless she continued to take her pills daily or often. But not more than twenty hours elapsed before a discharge: some subsequent days she had two, a most unusual occurrence, except from pills, and yet *without a grain of medicine!*

“This case is too marked and signal to admit of any deception, or delusive play of a confiding imagination; and it has determined me to possess, if possible, one of your Braces for myself. . . . Several of the other members of my family would no doubt be greatly benefited by the use of such an instrument. My own case is dyspeptic, with sometimes a great sense of ‘goneness,’ and a failing voice and hoarseness. I am 22 miles N. W. from Chicago, in the same county.”

CASE 2.—Mr C., of Connecticut, a man of extraordinary intellectual endowments and pleasing manners, had for many years been so afflicted with costiveness, that it was common for him to pass eight or ten days without an alvine evacuation. His feet were always cold, his head hot,

dizzy and confused. He had ceased to write, to argue and reflect, or to transact any business of a quiet and orderly nature. His general health was failing, and he was growing imbecile and childish. He told me himself, that he was afraid of idioey or insanity. At length he became very irritable, gloomy, hypochondriacal, and talked about putting an end to his life. His abdomen was tumid and indolent, large at the base, and very hard. But, notwithstanding all this, in one moment after the Brace was applied, he said his stomach and head were greatly relieved.

We then parted, and I did not see him again for a considerable length of time. When he returned, he said, "I thought I should have died shortly after I put on that Brace. It was very agreeable at first; but my abdomen soon became tender, and the instrument put me in torment. I soon found that I could not even bear the weight of my clothes. But I concealed these facts, being determined to stand it out. Finally, I was called to the stool, and the result was, a most violent fecal efflux, whereupon all tenderness disappeared, and from that time my bowels have been daily evacuated. The coldness of the feet, and the confusion and throbbing of the head, have also ceased, and more than all, my mind is about as vigorous and flexible as ever."

The violent discharge from the bowels in this case, was owing to the fact of their activity being at so low an ebb, that considerable time was required to produce an excitement, even by the use of extraordinary means. It was but a natural thing therefore, that when the disturbance *did* come, it was manifested by some intensity of action. It is true that such effects are uncommon; but they are perfectly in keeping with the circumstances of the case.

CASE 3.—Mrs. F., of Connecticut, a teacher, about 31 years of age, was also induced to try the Brace. She seldom had an evacuation oftener than once a week. Her head was always aching, and she complained of an intolerable

weight at the pubes, and great tumidity of the abdomen in that locality. As soon as the instrument was adjusted, she experienced relief from every symptom but that of costiveness; but this also was entirely overcome in a very short time. This lady subsequently informed me that she had been perfectly happy ever since the constipated state of her bowels had yielded to the influences of the Brace, and that she felt as though a new life was before her.

CASE 4.—Another person in Connecticut, a tailor, who was in a most pitiable condition, concluded to use the Body-Brace, simply, as he expressed it, by way of experiment. His bowels were in a dreadful state. He was a poor, constipated and emaciated hypochondriac, that knew nothing of the blessing of natural fecal evacuations. I hesitated somewhat about putting on the Brace, as he had scarcely abdomen enough to bring its principles into action; but, notwithstanding, its application produced immediate relief. His bowels were perfectly restored, being daily evacuated, and his health, appetite, rest, and mind have also returned to their wonted state.

CASE 5.—The next case we shall present is that of Mr. R., also of Connecticut, who had for twelve years been so severely afflicted by costiveness, that when anything passed him, it seemed, to use his own language, "like matter." He was gloomy and melancholy; and, although attended by many of the best physicians, he was evidently growing worse. Indeed the case excited universal sympathy and regret. The Brace was applied with but little hope of success; and yet, to the utter astonishment of all who knew him, he was entirely relieved, and soon resumed his accustomed vigor and cheerfulness. So great was his gratitude and his confidence in the system, that he rode from village to village, exhorting those who were similarly afflicted, to lose no time in doing just what he had done to obtain relief.

CASE 6.—Miss F., a young lady of Vermont, was en-

tirely broken down by a sedentary life. Her abdomen was quite pendulous, and her bowels very costive. She suffered all that was possible, both from the direct and reflected effects of constipation. Every unpleasant symptom, however, was at once relieved, by the application of the Brace, the most perfect regularity of peristaltic action having been restored from the day that it was first applied.

CASE 7.—A gentleman of the same State, about 40 years of age, says, that in applying the Brace for other affections, he was surprised to find himself also cured of habitual costiveness, having been *compelled*, ever since the application of the instrument, to pay *daily* attention to the calls of nature.

USE OF THE BODY-BRACE FOR HEMORRHOIDS OR PILES.

CASE 1.—DR. K., of Pa., was cured of the *Piles* by using the Brace. He had been afflicted with the same for the last six months, being unable to ride without severe pain.

CASE 2.—MR. C., of Philadelphia, who suffered greatly from piles, as one of a complication of evils, in saying that he derived efficient aid from the Brace, mentions also the fact, that the *piles* were the first to yield to mechanical appliance.

CASE 3.—MISS E., of Vermont, among other physical derangements, was sorely afflicted with piles. She could scarcely sit. Her bowels were always costive, and she suffered greatly from the long train of afflictions usually consequent on the same. The use of the Brace soon brought all her troubles to an end. As she quaintly expressed herself, she was "about entirely relieved." In this case, also, the piles yielded promptly to the principles involved in the construction of the Brace.

CASE 4.—MRS. G., of Vermont, an old and habitual sufferer from piles, made use of the Brace, and notwith-

standing she was so irritable and restive, that she could not bear its gentle pressure for more than two or three hours at a time, declared that she felt relief from the first hour of its application. Of course, the more continuous the pressure is made, the more signal will be the results.

CASE 5.—Mrs. B., also of Vermont, an enterprising and intelligent lady, had partly cured herself of the piles; but the doctor concluded to re-establish them by the use of *aloes*; designing, by this means to direct the morbid tendencies of the system towards the lower bowel, with the view of protecting her from a threatened disease of the lungs. The piles accordingly returned with alarming force. The effect on the rectum was intolerable, the mucous membrane of the same becoming extensively inverted, and exceedingly congested and enlarged.

When we first saw this lady, she was preparing for another operation, having already endured two or three, with favorable results. She was not costive, but experienced great trouble with her alvine evacuations. The calls were more frequent than desirable, and the efforts only partially successful, each evacuation being attended by great straining, and a dropping down of the folds, or as she called them, "*bladders of the inner coat of the bowel*." Three of these evacuations would generally occur in the morning. She would then remain quiet and easy the rest of the day, and during the night. After every fecal effort, this poor sufferer was compelled to lie upon the floor, with her hips elevated, and replace the bowel with her hand. With uncommon firmness and resolution, yet with worn and haggard look, she still superintended her household affairs.

At length hearing of the doings of the Body-Brace, she at once resolved to test the correctness of its principles. The next morning it was accordingly applied. In the evening I called to see her; she appeared like a new creature. Her countenance and the sprightliness of her movements showed that she had undergone some material

change. But her *tongue!* oh, it distanced all other indications of improvement. Her family thought she was "getting crazy." Indeed they knew not what to think. Two days after this, we made her another visit, when she informed us that a great change had taken place, her stools being regular and healthful; and that whereas formerly she "could not lift, reach, or stoop without a prolapsus of the bowel, she could now do anything as well as ever; even," as she added, by way of illustration, "to the tacking down of a carpet, this very day, a thing which I have not been able to do for many years."

CASE 6.—Mr. C., of Pittsburgh, Pa., had from his youth been afflicted with piles, being much of the time obliged to lie upon his back. He had been partially relieved by having the large tumors extirpated by ligature. When he called upon us, his suffering was intense. But, like most other cases, it was promptly relieved by the use of proper mechanical support.

CASE 7.—Dr. G., of the same place, was perhaps the worst case of piles in existence. Notwithstanding a thorough operation for the malady, in Philadelphia, he still labored under a prolapsus of the bowel, which troubled him sorely unless a firm pressure upon the affected part was continually maintained. But as soon as the Pile-Spring was attached to the Body-Brace, which was already in his possession, he felt assured of its beneficial results. The immediate relief he experienced so delighted him, that he enthusiastically declared in favor of "*immortalizing the inventor.*"

CASE 8.—Mrs. W., of Southport, Wis., had been tormented in much the same manner, except that she had not submitted to any surgical operation. Bleeding, almost to fainting, at every evacuation, and unable for weeks to raise her head, she maintained a bungling and tedious pressure upon the parts, which only enabled her to crawl about in misery and tears, refusing to be comforted, and tired of life. When

the Brace was about to be applied, she said it was too much for her even to *hope* for relief. But as soon as the instrument was properly adjusted, and firmly locked, she exclaimed, with characteristic energy, "*that will do it : I know it will !*" In the evening of the same day, she called upon us, and with a bright and cheerful countenance that told unerringly upon the result of the application, said, "O, sir, I intend to write you such a statement as will open the eyes of the afflicted, and turn their attention to your ingenious contrivances for their relief."

MORBID EFFECTS OF RELAXATION UPON THE URINARY BLADDER.

Urinal Incontinence and Retention—Affection of Prostate Gland.

THE Urinary Bladder, when compressed by the descent of the bowels, is of course unable to retain its contents a proper length of time, in which case there will be a frequent desire to void the same. This is termed *incontinence*. It is not very dangerous, but exceedingly troublesome and inconvenient. Sometimes an angle is also produced in the *neck* of the bladder, thus mechanically obstructing the passage of the urine, and inducing oftentimes the most terrible and fatal disasters. It is true that there are other causes for this malady, requiring internal treatment. But when the difficulty is purely *mechanical*, how many pumpkin seeds, how much Harlæm oil, or spirits of niter, will it require to relieve the suppression? Or, in cases of incontinence thus engendered, how much tinct. lyttea, balsam copaiva, bitters, &c., will remedy the matter?

The bladder evidently needs no medicine. Let but the oppressive and superincumbent weight be removed, and all will be well. The patient will then be saved from the annoyance of the catheter and the disgusting use of nostrums. Let no one think of internal dosing without understanding

the form and habits of the patient. Let him see that the abdomen is not pendulous at its base, and relaxed in its upper region. Let him be fully assured that the difficulty does not require mechanical aid ; for many cases, both of incontinence and retention, after resisting all other treatment, have yielded to the application of the Brace. The most troublesome incontinence has often been relieved, by merely lifting up the bowels with the hands, so as to change the shape of the abdomen. In retention also, relief has often been afforded by simply turning the sufferer on his face.

Although so dissimilar in their phenomena, both incontinence and retention may arise from one and the same cause, the disease frequently alternating from one condition to the other ; and it is particularly worthy of remark, that very many or most of these cases, are either dyspeptics, hypochondriacs, or subjects of *prolapsus uteri*.

Pregnancy often induces an affection of the bladder ; but cases of incontinence or retention of urine thus produced, will almost invariably disappear at the approach of the Pelvic Girdle.

In various cases of affection of the prostate gland, the abdominal supporter or Body-Brace has done much to relieve the tenderness and pain of the irritated part, by simply removing the superincumbent weight.

USE OF THE BODY-BRACE FOR INCONTINENCE OF URINE.

CASE 1.—Col. S., of Jacksonville, Fla., was for many years so afflicted as to be unable to retain his urine longer than fifteen minutes ; in consequence of which he was compelled to avoid all public gatherings and long speeches, being obliged to give *immediate* attention to every call, or suffer most violent pain. In vain had every local and constitutional expedient been resorted to for relief. On examination he proved to be a corpulent man. His abdomen was pendulous, and rested heavily on the pubes, and con

sequently too much so upon the urinary organs, thus interfering materially with the proper distension of the same, and causing the frequent demand for its evacuation. From this cause also, there seemed to be, at times, a short curve in the neck of the bladder, producing severe pain in discharging the urine. The Brace was applied under the confident expectation of at least imparting much temporary comfort, if not of removing the malady; and, so prompt and decided was the benefit derived, that the Colonel immediately pronounced it "a pleasant thing any how, and well adapted to hold his belly up, if nothing else." The next season we had the pleasure of learning from him that he was sound and well.

CASE 2.—Mrs. E., of Orchard-street, New York, had been confined to the house for many years, by an almost continual dribbling of urine, together with a severe burning and "crampy" pain in the neck of the bladder, when evacuating such portions of its contents as from time to time chanced to be retained. The difficulty under which she labored was termed "disease of the bladder." She had been several years under the care of the most eminent medical men; but their efforts were unavailing. The secret cause of her trouble, however, was obvious enough to one who had become familiar with the mechanical origin and treatment of chronic disease.

Taking a simple glance at the patient, we found her quite a fair specimen of the drooping form, her shoulders being round, her chest flat, her stomach hollow, and her abdomen exceedingly flabby and pendulous. These things led us to hope that there was no real local *disease* of the bladder, but merely a *mechanical pressure on the body and neck*. Being much interested in the result, and desirous to ascertain the value of the opinion we had expressed,—which opinion of course involved the use of the Body-Brace,—one of these instruments was immediately sent for by the patient, who was careful to have it properly fitted

upon the body. From that moment she commenced to improve, having no longer any use for medicines or absorbent applications. Shortly after this she called to say, that she was perfectly well, and about to start for California.

Wonderful as may appear the sudden change thus wrought upon a case of such long standing and painful incontinence, it requires but a small degree of common sense to appreciate the perfect simplicity of the process by which it was accomplished. If the neck of the bladder is compressed by the descent of the internal organs, surely no medicinal treatment of the bladder can replace these organs. The treatment indicated by such a mechanical derangement of the parts, is evidently that which will effectually *brace the kidneys, at the same time that it elevates and supports the depressed abdominal viscera.*

USE OF THE BODY-BRACE FOR AFFECTION OF PROSTATE GLAND.

CASE 1.—Mr. K. was at Saratoga Springs, where he hoped to find some relief to a dreadful affection of the prostate gland, from using the medicinal waters. The gland was evidently much diseased and enlarged, and in the highest state of irritability. The recumbent posture was more agreeable to him than any other; his pain being greatly aggravated by walking or standing erect. He was in the unconscious habit of carrying his hand in a supporting condition at the base of the abdomen. His form was drooped, the region of the stomach retracted, and his lower belly pendulous; all of which indicated that the diseased organ was constantly exposed to the pressure of the superincumbent mass. Concluding from the circumstances of the case, that a gentle, firm, upward support would diminish his sufferings, by removing undue pressure from the irritable part, we advised the immediate use of the

Body-Brace; and it was truly gratifying to witness the result of the application. He was at once relieved from severe pain; and in a very short time every feature of his complaint was marvelously improved.

MORBID EFFECTS OF RELAXATION UPON THE UTERUS AND ITS
APPENDAGES.

Prolapsus Uteri, or Falling of the Womb.

It will be seen by referring to the mechanical relations of the truncanal organs in the first part of this work, that the *uterus* has five supports, namely, the *cellular tissue* with which it is surrounded, the *vagina*, the *round*, and the *broad ligaments*, and the *peritoneum* or lining membrane of the belly.

These supports are designed to bear the weight of the small intestines, situated below the mesocolon. They also serve as a floor on which the abdominal organs may rest. Their primary object, however, is, to sustain the uterus in the first four or five months of pregnancy, before it has risen above the pelvis, and when it is several times heavier than in its ordinary state; else what would become of this organ? for, surely, if it required all these supports in its quiescent state, there would be an unavoidable falling and dragging, when borne down with weight by the *foetus*; a view of the matter, which no rational mind could be found to adopt, as it plainly implies that *prolapsus uteri* is a necessary accompaniment or consequence of gestation. Yet, still it is notorious, that a distinguished member of the medical profession in this city recently asserted on a public occasion, that "*this disease was extremely rare among unmarried ladies.*" And what is this but saying that it is peculiar to those who are *married*? And if peculiar to married life, how far is this from the conclusion, that *prolapsus* is consequent upon gestation?

Now, for the information and benefit of those who are easily led into such unwarranted and perilous conclusions, we take the liberty, in passing, to mention, as the result of our own extensive observation and experience in this important matter, that *not one-third* of the cases of gravid uterus, complain at all of prolapsus uteri; and also, that a large proportion of these have been repeatedly afflicted in this way, *antecedent to the period of conception*. Should any one, however, after reading this page, still be disposed to the opinion, that "this disease" is extremely rare among unmarried ladies," we are enabled to state farther, that no less than *three-fourths* of all the cases of *prolapsus uteri* occur to the womb in its ordinary state, the calamity being about equally divided between married and virgin life.

But how happens it that this disease prevails to such an alarming extent, when the uterus is not in a gravid state, and therefore not sufficiently weighty to produce any uneasiness; and when too, it has the advantage of all the strength held in reserve for its enlargement? Why, it is simply because the subjects of this malady, *almost without exception*, are persons in whom the habits of civilized life, favoring general organic derangement and muscular debility of the system, have induced that superincumbent pressure, which, from the very nature of the case, urges the uterus downward, straining its suspensory powers, irritating the nerves of organic life, stretching every fibril, and establishing the most excruciating pains in the surrounding parts. Indeed, so distressing and terrible is the prolapsus thus induced, that sometimes the uterus is found protruded upon the outer surface of the body!

The effect of muscular relaxation upon the womb and its appendages, is daily producing an almost incredible amount of anguish. Crushed beneath the weight of the fallen organs, as may be seen in Fig. 16, p.150, the neck of the womb presses with great severity upon the vagina, inducing *leucorrhœa*, and many other disagreeable and painful

Fig. 16.

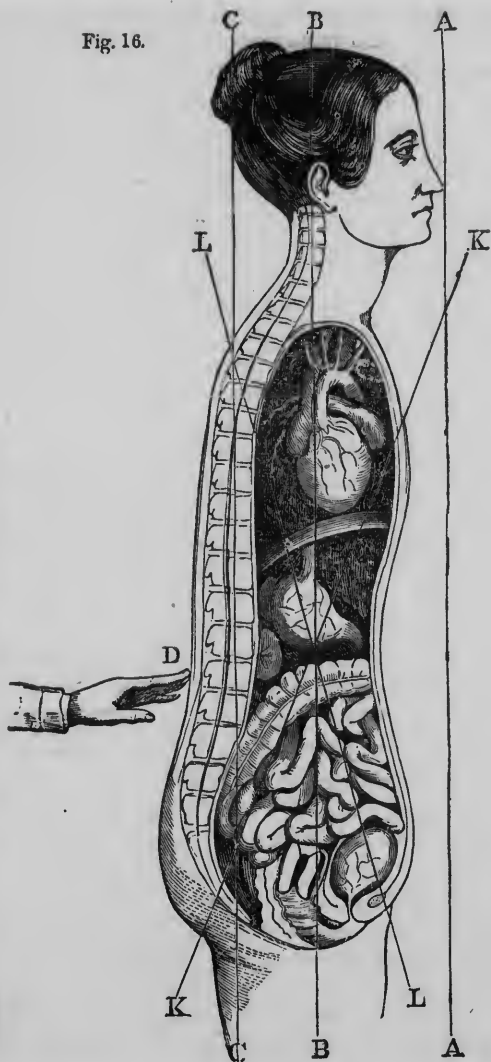


FIG. 16.—Side view of the sunken bowels, with consequent dragging upon the heart and lungs, and compression of the womb, bladder, and rectum.

affections. Meanwhile, the *body* or middle portion of the organ is resting either upon the bones or upon the soft parts of the pelvis, causing severe "bearing down pains" in that locality. These pains are often rendered intolerable by the least physical exercise, and are generally attended with a sense of "weight" and "dragging," and oftentimes with a burning pain throughout the system.

The constant pressure which is thus exerted upon the neck of the uterus, brings about a very hardened, irritable, enlarged, painful, and often dangerous condition, which has not unfrequently been supposed to indicate cancer of the womb. We have seldom failed, however, to cure all diseases of the neck of the uterus by the simple application of external support to the abdominal organs, the cause of the irritation being thereby at once removed.

When the *round* ligaments are put upon the stretch, a disagreeable "drawing" or "pulling" sensation will be experienced in the groins where these ligaments are fastened. The *broad* ligaments also, which are spread and fastened over the small of the back, are producing their own peculiar "dragging," "grinding," tormenting pains about the loins, so common to the afflicted female, and so well expressed in that descriptive phrase: "*I feel as though a joint or two of my back were gone.*"

Prolapsus uteri, or falling of the womb, is a disease which has become fearfully prevalent in every community; nor is it confined to married ladies, as has been erroneously supposed by some, whose position, to say the least, should be a sufficient guarantee against all careless observation in medical practice, and whose assertions have received due attention in our preceding remarks.

Only a few, comparatively, of the victims of prolapsus understand the true nature of their difficulty, or know anything about the value of mechanical support, to say nothing of the *absolute necessity* of its adoption for the eradication of disease mechanically induced. They know not

that those who are supposed to have "*recovered*" from this malady, by the internal use of the *pessary*, and the tedious process of lying *perfectly still*, are only *relieved*, it being impossible to *cure* them by any such means; the predisposition to the malady forever remaining as the legitimate offspring of the habitual drooping form, or the fashionable *Grecian bend*.

This dreadful affliction generally comes on by degrees, or in other words it *gradually* taxes the subject's powers of endurance; and, if promptly met in its incipient state, by judicious mechanical means, is easily subdued; for, notwithstanding the prevalent opinion, that *prolapsus uteri* is not induced by superincumbent pressure, but by primary weakness of the ligaments, we shall hereafter demonstrate (if we have not done so already), that as soon as the *pressure* is removed, the womb will begin to rise by the returning strength of the uterine supports. In order to enable the reader to decide upon the existence of the malady, we give below a succinct description of the same.

Almost simultaneously with the descent of the womb, the back begins to ache, the pains varying in their nature and intensity with the progress of the disease, until they assume the most terrible "pulling," "twisting," "grinding," "wrangling," and "wringing" forms. These pains are usually experienced in the region of the kidneys and in the groins. The back is often represented as being "broken," or "pounded," or "drawn." Severe "*bearing down*" pains, like a ponderous weight at the base of the abdomen, are also felt in the *sacrum*, or rump-bone. The limbs of the patient become heavy and clumsy, and subjected to cramps, numbness, and prickling sensations. The most unrelenting and intolerable *dragging* at the breast, which the patient bends forward to avoid,—a sense of "*goneness*" at the stomach, swelling of the feet and limbs, constipation, and leucorrhea, together with "a feeling as though the hips were loose," are also to be reckoned

among the ruinous effects or symptoms of this appalling disease. Although the sufferer may be somewhat lively, and comparatively free from pain in the morning, yet ere noon arrives, she is greatly indisposed, and begins to move carefully, supporting with her hand the lower abdomen, as if she were afraid of jarring or jolting the internal organs; and not unfrequently does it happen, that before night approaches, her accumulated sufferings will extort cries of anguish and despair.

The above is by no means an exaggeration of the symptoms of *prolapsus uteri*. The *intensity* of the suffering, however, belongs to an advanced stage of the disease. But the *modification* of the symptoms, enabling the subject, as is often the case, though always with more or less suffering, to attend to her ordinary duties, does not at all affect the signs by which the nature of the disease may be discerned. And let it not be forgotten, that in every variety and degree of prolapsus, the safest and most reliable treatment is the immediate application of the Body-Brace.

Before proceeding to demonstrate what has been said about the pathology of this disease, by the introduction of cases bearing on the point, we must notice one or two of the objections urged against the use of external support by those whose opinion, in general, is not to be lightly esteemed, and whose errors are therefore the more dangerous. These gentlemen confidently assert, that "*prolapsus uteri* is *not* caused by a relaxation of the *muscles*, but by a weakness of the *ligaments*; that external support, however concordant with the natural action and bearing of the muscular forces its principles may be, must necessarily press as much *upon* as it lifts from *off* the *uterus*, and therefore can do no good." That such is *not* the fact, is shown by the *invariable* relief given to the sufferer by upward and backward pressure, even when this pressure is made by the mere application of the human hand, that is, by placing one hand upon the lower abdomen, and the other upon the

small of the back, lifting and pressing firmly at the same time with the former, in an oblique direction up towards the latter ; this peculiar action being the same as that of the muscles which sustain the mechanical relations of the truncal mass.

Again, if mechanical support, imitating the action of the muscles and judiciously applied, will not relieve a case of aggravated prolapsus, we are clearly in a dilemma ; for it is admitted that the natural healthful action of the abdominal and dorsal muscles, is upward and backward ; and that these muscles are the actual organs which support the viscera and preserve their determinate form and position. Of course then it follows, that, the more healthy and elastic are these organs, the more perfectly will they effect this perpetual elevation and protection of the pelvic viscera. But, says the objector, "It matters not, however interestingly or perfectly analogous the action and bearing of any mechanical device may be with the action and bearing of the muscles, such device must necessarily produce as much pressure *downward* as upward"! Now if this were the case we should think it fair to conclude, that, the more active and elastic, and altogether healthy, are the muscles in question, the more will they tend to produce prolapsus, by pressing down a part of the bowels more forcibly upon the uterus. We would also suggest, that such reasoning as this, is not exactly the kind our opponents should adopt, to induce the belief, that muscular relaxation may not be a fruitful source of prolapsus and general mal-position of the abdominal and pectoral organs, or that external support, like that supplied by our mechanical devices, will not relieve these effects.

Another very grave objection is based upon the assumption, that even should the support of the Brace, in accordance with our promise, give immediate relief, that relief is not obtained on scientific principles ; but in opposition to a known law of the vital economy. It is said, that "if the

natural function of supporting muscles be *artificially* or *mechanically* performed, their torpor is increased ; and, that the natural stimulus on which they depend, being thereby superseded, they must soon lose entirely their tone." This is physiologically true ; but it is *only so*, when applied to muscles or organs *in health* : as for instance, if the farmer or the blacksmith should quit his vocation, and bandage up his muscles and take no exercise. But *we* come to a *sick* person ; to one who is laboring under both local and general muscular relaxation in its most distressing form ; where the effects are co-operating with the cause to enfeeble and depress,—so much so, that even the most gentle carriage exercise aggravates the symptoms and increases the misery of the patient ; to one who is totally ineligible, for a time at least, to other than artificial curative means. We come to one, of whom common sense says, " Bind her up, that she fall not to pieces. Hold her comfortably together by such mechanical devices as shall imitate the action and bearing of the muscular forces, and thus maintain the primitive relation of the parts, in order that she may be the sooner enabled to endure such physical exercises as her medical adviser may deem necessary to re-establish the health of the system."

It is also erroneously objected, that those who may recover from prolapsus by the use of the Brace, will be unable, from habit, to lay the instrument aside. And this is deemed by some a sufficient reason for avoiding mechanical support ! *Only to think of it !* But after all, there is nothing like putting principles to the test, in searching after truth. Let us therefore make an application of the one before us.

"My friend, you have been for years laboring under great distress, owing to a displacement of some of your organs, and the consequent loss of their vital energy ; and you well know that I have tried my utmost to alleviate this distress, by pessaries, tonics, anti-spasmodics, and

other hopeful remedies ; but all in vain. To be sure, I know of a very simple and comfortable remedy, that would afford you efficient relief, and almost make you forget your troubles. But I must warn you not to think of using this remedy, as there is great danger of relying too much upon it for support ; or in other words, of substituting *the habit of being comfortable, for the habit of enduring pain.*"

But enough of such charitable reflections. Let it suffice, that, hereafter the invalid must use his cane or crutch, *after* he has recovered the strength of his limbs ; that the child must creep and struggle from chair to chair, *after* it is able to walk and run ; in short, that all *assistance*, of whatever kind and degree, must henceforth be rendered, *after* the emergency shall have passed away.

It is also contended by those who oppose the use of judicious mechanical support, that prolapsus is a primary disease, existing in the uterus or its ligaments ; that all the attendant affections of the stomach, side, heart, lungs and head, and in fact the whole nervous system, are the result of *sympathy*, and not of mechanical derangement ; that inasmuch as prolapsus is a local disease, the remedies should be applied upon the organ itself. Of course, then, it is only necessary to elevate the uterus, so as to give its ligaments time to regain their strength.

This exclusive treatment of the womb, comprising as it does, the simple elevation of the organ itself, involves the persevering use of the *pessary* ; a practice which it is humiliating to observe, has been adopted and extolled by the loftiest heads and proudest names of the profession ; but one which we are willing to admit, when the cases were not aggravated, or of long standing, or accompanied with torpor or atrophy of the muscles, has afforded relief : yet nine out of ten thus seemingly relieved by the pessary, owe their recovery to the invigorating constitutional remedies and physical exercises adopted in conjunction with the use of the pessary. Moreover, the little benefit

thus implied, as having resulted from its use, is probably referable to the exercise of superior medical skill in counteracting its injurious tendencies. The pessary, however, cannot take much credit to itself by such admissions as these.

It will be remembered that the objection to supporting the viscera by mechanical means, is, that it weakens the powers of life, by *mechanically* performing the functions of supporting muscles. But how does the pessary produce its boasted relief? Is it not also claimed that it *mechanically* performs the functions of the ligaments, in doing for the uterus what such ligaments ought to do? And will it be said that *this* does not constantly tend to weaken the same, by doing away the necessity for their action? Is not this *especially* the case, if, as is claimed, the original descent of the uterus is *caused and perpetuated by the relaxed condition of these identical ligaments?* We can readily perceive that the objection applies to the *pessary*; and, with equal force does it apply to almost every kind of mechanical support. We claim, however, for our own mechanical devices, and hereby challenge either private or public investigation to the contrary, that no such objection can reasonably apply; and this challenge we would modestly base upon the *physiological* construction, as set forth in the preceding description of the several instruments.

Without stopping to consider, because embraced in our forthcoming review of his pathology of *prolapsus uteri*, the absurd conclusion of the celebrated Dr. Meigs, namely, that "a contractile shortening of the vagina, is *the* producing and perpetuating cause of this disease," we would simply ask, What is the natural action of the *pessary*, upon that relaxed and irritated state of the vagina, which has been so strangely mistaken for "a contractile shortening," but which we hold to be a remote effect of the relaxation of the muscular bandages of the trunk? Is it not the perpetuation of such relaxed and irritated condition of the va-

gina, inducing *fluor albus* and general debility, and other wise lessening the chances of success, in the subsequent application of other remedial means?

Seeing then, that the objections urged against judicious external mechanical support, in the treatment of prolapsus, are more applicable to the favorite internal support or *ressary* of our opponents, we now ask the public and the profession, which course of treatment holds out the greatest prospect of relief? In other words, Which course is most likely to restore the normal condition of the uterus and its appendages?

What we would now speak of, we have already alluded to, namely, the depression of the mouth or neck of the womb, into the *vagina*; by which means the latter becomes distended and irritated, and its fibers and pores or ducts relaxed, the secretions being thereby greatly provoked, and the vessels pouring out a fluid, the morbid discharge of which is termed *leucorrhea*.

This malady does its full share in destroying female health and happiness. No specific internal remedy for it has hitherto been found, and no age is exempt from its attack. They who are subject to it, are, almost always, afflicted with prolapsus, pain in the back, nervous susceptibility and lack of energy. In short, they have more or less of the *drooping* form, and usually complain of most or all of the effects growing out of the same. These facts argue an identity of origin and progress in leucorrhea and prolapsus. But leucorrhea has more commonly been viewed and treated as a primary disease. Hence it is that in vain almost every variety of treatment has been adopted for its relief. Of course we are speaking of this affection as mechanically induced by general muscular laxity. Like other *effects*, this disease is the *cause* of other difficulties, which is especially the case, in its aggravation of prolapsus.

In the early part of our professional career, we found

that in making use of the Brace for prolapsus, many were also cured of leucorrhœa, which, at first, we did not understand. But the frequency of the occurrence drew our attention to the subject, and we are now able to say, that not more than two or three cases have come under our observation, which by the use of the Brace, have not been essentially, if not permanently relieved. And we submit, whether in three-fourths of the cases, the symptoms accompanying prolapsus and leucorrhœa are not the same,—the increase or decline of the one disease being contemporary with that of the other.

USE OF THE BODY-BRACE FOR PROLAPSUS UTERI, OR FALLING
OF THE WOMB.

CASE 1.—The first case we shall present, is that of a lady in Pennsylvania, who had been confined to her bed for many years. She had had the misfortune to miscarry ; since which time she had not been able to sit up without fainting. She complained of *all* the symptoms of prolapsus, and neither talent nor time could afford any permanent relief. But in less than twenty-four hours after the Body-Brace was applied, the malady was brought under its physiological influences, and so effectually controlled by the same, that in the space of a single week, she was enabled, by the aid of her husband's arm, to walk to the house of a neighbor, where a decision was had, *without argument*, in favor of the advantages of external mechanical support. In a few months after this she attended to her domestic affairs, and she now enjoys perfect health ; having had the satisfaction, in the mean time, to test the completeness of the cure, by "passing *safely* through the great pain and peril of child-birth."

CASE 2.—The next case of prolapsus we shall cite, is that of a young lady of the same State, about nineteen years of age. Drooping, pale, weak, and dyspeptic ; her

FIG. 17 is a front view of the Body-Brace, relieving weakness of the legs, womb, bladder, rectum, bowels, stomach, heart, lungs, and vocal organs, by lifting the sunken bowels away from the parts below.



Fig. 17.

internal organization appeared to be thoroughly disturbed. Indeed, it could hardly be supposed that she had endured so much suffering as we are about to relate. Her limbs were tremulous, and oftentimes bloated. They were also subject to cramps on the slightest motion. Her back seldom, if ever, ceased to ache; and her hips seemed to be out of joint, whilst in the groins and lower abdomen she experienced great pressure and weight. The stomach also partook largely of the effects of this manifest *displacement*. She was unable to ride in a chaise, and could scarcely walk across the floor.

The ordinary routine of treatment had no effect upon the malady, and the patient had begun to despair of relief, when friendly suggestions induced her to apply for mechanical aid. The use of the Brace produced an astonishing change. The pain in the back was *instantly* relieved. From that moment she was able to walk with ease and comfort; and in *four* days after she resolved to try the instrument, she was greatly improved in strength, and comparatively well. When I saw her last, she was strong and hearty, her form was erect and symmetrical, and, strange to tell, after what some philosophers have said about the force of habit, *Banning's Body-Brace had nothing more to do!*

CASE 3.—Mrs. B., of Pittsburgh, had suffered so long and so severely from this dreadful disease, that she began to feel somewhat agitated about the probable effect upon her rising family, of the despairing character of her looks, and the gloominess of her demeanor. Her limbs were almost powerless; and to use her own language, “she had not walked to church in the city for four years.” The flabbiness of her abdomen was surprisingly great. So distressing also was the pain in the back, and the “bearing down” upon the lower extremity of the back bone, that she could not sit in a chair without placing her feet upon a table, and tilting the body backward, so as to remove the weight of the organs from the parts below. But, notwith

standing all this, in one hour after the Brace was applied, she walked quite a distance in the street, without fatigue or pain. On one occasion she remarked, that, if she could not obtain another Brace, no sum of money could purchase the one now in her possession.

CASE 4.—Mrs. C., of the same place, had been unable for a long time to attend to her domestic affairs, being badly troubled with falling of the womb. Her stomach was much retracted, and her limbs almost useless, whilst the sense of separation at the hips and of great weight and bearing-down at the lower abdomen had long been insufferable in the sitting or standing posture. The ordinary medical treatment had proved unavailing, except in affording temporary relief. This lady was also afflicted with the usual concomitants of prolapsus, namely, constipation and leucorrhea, and general debility. We left her as soon as the Brace was applied, and did not see her again for a year, when we found her restored to health, and superintending a large public establishment.

CASE 5.—Mrs. L. and Miss M., of Philadelphia, two cases exactly alike, were suffering from extreme muscular laxity of the system. They could walk but a few steps; and so great was the general displacement, that both appeared to be suffering from consumption. The heart and stomach partook largely of the difficulty. All the symptoms and effects of prolapsus were extreme. In these cases the Brace was applied, and in two weeks they were nearly restored, their forms being erect, their respiration full and easy, the heart quiet, and their general strength and locomotive powers vastly improved.

CASE 6.—A lady of Connecticut had been confined to her bed for two years. She had spent a large amount of money in the employment of the first medical men of the country, but without obtaining relief. She could not so much as walk across the room without serious inconvenience. Having tried almost everything, and wearing at the

time one of the most popular supporters, she resolved at once to try the Body-Brace, which was promptly applied. Immediately she arose and walked several times around the room, an exercise which was performed with so much ease and astonishment, as suddenly to elicit from her the inquiry, "Why, doctor, are you a *witch*?" Her little daughter, who followed her around the room, with evident surprise, said, with childish impulse: "I will give the doctor my pink dress to carry home to his little girl, because he has cured mother." In two or three days after this, she was visiting all over the neighborhood, and her peculiar case soon became the chief topic of remark.

CASE 7.—The next proof of the perfect adaptation of the Body-Brace to the necessities of the patient in the treatment of prolapsus, is found in the case of Mrs. K., of Pennsylvania, who had been for years confined to her room; and for more than six months of this time, unable to stand. Of all cases of muscular laxity and consequent displacement, this was fast taking the lead. Still, with the aid of the Brace, the patient could walk about with comparative ease. We have since received a letter from her husband, expressing his high admiration of our mechanical device.

CASE 8.—Mrs. B., of Connecticut, was for several years the victim of prolapsus. But owing to the changeful character of the symptoms, she was sometimes treated for liver complaint,—sometimes for consumption,—at others, for dyspepsia, dropsy, spinal disease, &c. Her muscular system was all relaxed; and her abdomen, to use the expressive language of one of her intimate friends, "felt like a bag of apple-sauce." She told the doctor she was not sick, and constantly protested that she "only needed to be relieved of those hanging, pulling, and dragging sensations," the exasperating nature of which entirely destroyed her physical energies. As in almost every other in-

stance, the author had the pleasure of seeing this case immediately relieved by the application of the Brace.

CASE 9.—Mrs. B., of Vermont, had for fourteen years been confined to her bed. She could neither sit nor bear the jolting produced by walking across the floor. Her mind was terribly depressed. Her muscles, if we may so speak, were a mass of *tissue*. The hand could grasp any quantity of them. The sitting posture invariably augmented the disagreeable sensations just described. She had been untiring in her applications for relief, but all in vain; and, to aggravate her misery, her friends and gossiping sisters whispered around, that “she could do better if she pleased.” As soon as the Brace was applied, she seated herself in a chair, and said, “Doctor, this is the first time, in many years, that I have been able to sit without feeling a death-like sickness or *goneness* at my stomach.” In the space of one week she walked about the room and dressed herself, which she had not been able to do for a great length of time, and in about six weeks she commenced attending to her domestic affairs. This case created much excitement, and inspired many among the desponding, with the hope of a speedy restoration to health. But why prolong this detail?

CASE 10.—Capt. Thomas T. Tabb, of Dover Mills, Va., bears the following testimony: “It affords me much pleasure to say to you, that the Brace you kindly sent me on trial, has been of incalculable benefit to Mrs. Tabb, having done for her more than the best medical aid could effect in the three previous years. For nearly four years, Mrs. Tabb having suffered from prolapsus, has been compelled to keep her bed for months at a time. Neither has she been able at any time during this period to walk or ride. Since the use of your Brace she has almost recovered, and exercises freely, walking faster than many in perfect health, and occasionally riding in a buggy some twenty miles without the slightest inconvenience. It would

be a difficult matter to induce her to part with an instrument of such extraordinary supporting and comforting properties. Several persons who have observed this case have been induced to try the Brace themselves, and they are likewise doing well, and greatly pleased with it. I have an aversion to appearing in public, but believing as I do that the Brace will benefit the afflicted, and, being myself grateful for the influence it has exerted upon my wife, I do not feel at liberty to prohibit the public use of this letter, should you deem it suitable for such a purpose."

CASE 11.—Mrs. H. W., of North Providence, R. I., gives her opinion of the Brace in the following words: "After wearing your Brace, you will undoubtedly be desirous to have my opinion of the same. I think that you, and those who have tried the Brace, have not recommended it above what it deserves, and I wish, if possible, to express in some degree the benefit I have received therefrom. For nearly eight years past I have been afflicted with prolapsus. Sometimes I have also suffered from constipation, and sometimes from a looseness of the bowels, with general debility of the system and griping pains. In fact so many were my troubles that I shall not attempt to name them. For weeks together, the irregular state of my stomach and bowels has affected my head to such a degree that I feared my mind would become weakened. My wish was, that by death, or some other way, God would interpose for me, but if it was His will, I was willing still to suffer. At this time it was my privilege to hear of your Brace, and it was not long before I was profoundly astonished to find that I had derived from its use the most complete relief. I can say that I feel once more natural. My life, which had become a burden, is now changed; and God be praised, for putting it into the mind of man to produce such an instrument for the relief of the afflicted. Two weeks only have passed since I applied it, and my health is fast being restored. My bowels have become regular;

the sinking sensation at my stomach has disappeared, as well as the pressure and inward heat, from which I have suffered so much. O, what a dreadful state of body and mind have I been delivered from! And knowing of many others suffering from the same cause, who have in times past sympathized with me, it is my heart's desire that God will hasten the time when they also may stand forth happy witnesses of the efficacy of your remedy. May God bless you and yours, and turn the attention of the afflicted to your instrumentalities for their relief."

CASE 12.—Mr. Jas. J. Butler, of Cincinnati, in a letter sent us some time since, after furnishing an interesting description of his own complaint, which we have placed to his credit among the cases of Dyspepsia, on a previous page of this work, writes thus, about another experiment: "I desire also to state that my wife, who has been much afflicted with prolapsus uteri, having kept her bed much of the time, tells me, that by the simple use of your Body-Brace, she is now as well as any young miss, and free from all distress. To be sure, she added to the use of the instrument, your sage advice, relative to her *dress*, for which please accept our hearty thanks. To use her own expression, 'a load has been taken off her hips.' Moreover, she has only worn the Brace a month. I would also add, that some symptoms of the dyspepsia, which developed themselves before its application, have entirely disappeared."

Dr. Porter, of Bowling Green, Ky., whose name we are proud to use in this connection, recently sent us an interesting letter, from which we make the following extracts in relation to the use of the Body-Brace. Having heard of his adoption of the views advanced in this work, respecting the mechanical pathology of many affections of the viscera, and of his successful practice in the treatment of chronic diseases of the trunk, by means of the Body-Brace alone, we requested the favor of being furnished with some of

the details, when the following were kindly and promptly placed at our disposal, with the apology that his professional duties prevented him from writing out more than one or two cases at the present time.

CASE 13.—A married lady, the mother of several children, had, during the last ten years, been afflicted with prolapsus uteri, disease of the stomach, liver, and kidneys, and probably, her different physicians had located her disease upon all the organs in the abdominal cavity. At the time of applying the Brace, she weighed but 130 pounds. Four months after this, her weight was 180 pounds. She was also able to walk out, and do her household work. In short, her health seemed to be perfect; and, as her husband has since said to me, “she is a *wife* in the fullest sense of that term.”

CASE 14.—Another lady, the mother of three children, afflicted with prolapsus uteri, fluor albus, and great debility, had been unable to walk about her house for five years, without the use of a bandage, which I took off, when I applied the Brace. She was able to walk out the next day; has ever since continued to improve, and values her Brace at what she estimates her life to be worth. A few weeks after she began to wear the instrument, she was entirely relieved of the fluor albus, which greatly astonished her, as I had not promised any relief in that way, it being quite enough to *promise* relief to her other symptoms.

Dr. Porter goes on to say, “Other ladies have had their relaxed and weakened abdominal muscles so strengthened by wearing the Brace a few months, as to be entirely relieved of that weariness, aching and heaviness about the loins and pelvis, which so greatly afflicts thousands of females; and many who were unable to walk two hundred yards, have, by the use of this ingenious piece of mechanism, been enabled to walk a mile without fatigue. Of course this will not be believed by those unacquainted with the manner of its action.”

Fig. 18.

FIG. 18 is a back view of the Body-Brace, supporting the loins, drawing back the shoulders, expanding the chest, and relieving pain, aching, and weakness of the back, and incipient curvature of the spine; taking away the desire for corsets, and compelling the bowels to support the heart and lungs.



USE OF THE BODY-BRACE IN CASES OF LEUCORRHEA.

CASE 1.—Mrs. W., of Pittsburgh, Pa., had been afflicted with *leucorrhea* for a number of years. The discharge was so continual and profuse, that she had become a complete wreck. At this serious stage of the disease, when her strength and spirits had left her so dejected and comfortless that she spent most of her time in weeping, the Brace was applied. In the space of a single week, she was almost entirely relieved of the malady, and the change that occurred both in body and mind, was obvious to all. Instead of being unable or unwilling to move, as was formerly the case, and talking of the welcome approach of death, she was shortly after this, actively engaged in controlling the domestic arrangements of an extensive household.

CASE 2.—Another case, similar to the above, was that of an interesting young lady. Her whole surface was blanched, cold and leaden, and the gloom of despair had shaded her brow. She had acquired the drooping form, and her limbs had become weak, tremulous, and painful. So extreme and continual had been the leucorrheal efflux, that she was unable to bear the motion of a gentle carriage, and could not walk across the room without a tendency to faint. Palpitation of the heart and dizziness were among the troublesome symptoms. This lady was fitted to a Brace; and, in less than a week, she informed us, that not only had the leucorrheal discharge ceased, but that all other ailments had likewise disappeared.

CASE 3.—We will simply add, that a Mrs. G., who was afflicted with *leucorrhea* to a most serious extent, her symptoms being almost identical with those of the two preceding cases, and to whom we had previously administered powerful doses of tincture of *lytta*, the turpentine preparations, and all the other usual remedies for this complaint, was induced by us to make a trial of the Brace;

and we are happy to add that the experiment was in every way corroborative of the views we have advanced in regard to the pathology of this disease.

USE OF THE BODY-BRACE FOR UTERINE HEMORRHAGE AND PROFUSE MENSTRUATION.

THE extent of these diseases would scarcely be credited by any one who has not been brought in contact with their destructive influences. They impair the digestive, nervous, and muscular systems, by deranging the mechanical relations, and then obstinately, yet naturally enough, resisting the *constitutional* overtures of the ablest practitioners, until, at length, their ramified effects lead to the supposition, that the patient is absolutely afflicted with the entire protean group of maladies, termed female weaknesses.

Almost all of the cases of Uterine Hemorrhage and Profuse Menstruation are caused and perpetuated, to a greater or less extent, by a deranged condition of the truncal organs. And what, indeed, may we *not* expect by a change so great as that from *support* to *suspension*? It is true that some of these cases are much emaciated, and seem not to have abdomen enough to gravitate; and therefore we may not observe in them that morbid shape of the trunk so apparent in our representation of the drooping posture on page 18, where the descent of the viscera may be seen at a glance. But it matters not how inconsiderable may be this descent, so long as there is an actual change throughout the trunk, from support to suspension; for, when the most inconceivably morbid or unnatural change takes place in an arrangement whose susceptibilities are presided over by nerves, and ever so little descent be the consequence, there must always be some modification of the vital functions, either local or general; perhaps both. And when the *uterine* organs are depressed by the abdominal viscera, their functions must either be depressed, exalted,

or otherwise modified, by the breach thus made, producing irritation and debility in the nerves of organic life, by continually pressing upon them, and stretching their connections with the surrounding parts.

These diseases are always benefited by the application of the Braec. It matters not whether they have a local, constitutional, or mechanical origin. But when they exist as the legitimate effects of muscular weakness, their speedy removal by the use of this instrument, is no longer a matter of conjecture.

CASE 1.—We could record many cases in support of this view; but at present we shall only speak of Mrs. B., of Pennsylvania, the mother of a large family, who was, for *nine years*, afflicted with both of these maladies, and who, though occasionally favored with relief for intervals of several weeks, seldom passed more than seven or eight days without an attack. These attacks would often last three or four weeks, being frequently very sudden, and threatening instant death. In connection with the wasting away, this case presented all the morbid effects of general relaxation. She was nervous and dyspeptic, and the constipation of her bowels defied all ordinary means of relief. She was confined to the house, if not to her bed, though sometimes she was able to walk a distance of half a mile. Every sort of local and constitutional treatment had been tried, but only with a temporizing effect.

At length, the physician in the case, having attended one of the Author's public lectures upon the origin and treatment of chronic affections of the Visceral Organs, very courteously proposed this extraordinary case, as a test of the views advanced respecting the importance of mechanical support in cases of the kind. It can scarcely be necessary to say, that the Body-Brace was applied. True to the simple and immutable principles on which it is constructed, this instrument immediately brought her sufferings to a most agreeable termination. Her strength and spirits re-

turned at once, and in less than a week she walked a distance of three miles in one day. As might be expected, after this sudden change, her subsequent attacks were surprisingly diminished, both in number and severity, and her general health continued to improve, until every disagreeable feature of the case was entirely removed.

USE OF THE PELVIC AND CHILD-BED GIRDLE DURING PREGNANCY.

Those interested in the perusal of this and the following subject, namely, "the use of the Pelvic and Child-Bed Girdle for Lying-in Women," are requested not to overlook our description of the Girdle on page 65, where they will also find some general remarks upon these interesting topics.

The period of pregnancy is beset with a full share of troubles. Among these are pain and weakness of the hips and limbs, occasioned by pressure on the sensitive and ligamentous tissues; also great weakness and pain in the back, together with a darting sensation up the spine into the head, inducing confusion of mind, dizziness, ringing in the ears, and "strange feelings"; cramps in the muscles of the abdomen; weight, distension, and costiveness; urinary incontinence, or retention; varicose veins, and swelling of the limbs. Here, indeed, is a startling combination,—a sort of digest of human suffering. And is it any wonder that all this should produce abortion? Is it any wonder that the life of the sufferer should be worn out before delivery; or, that her offspring should so often drop, still-born, into the world? Now, we hold that almost every pang peculiar to the period under consideration, is *mechanically induced by distension, weight, and pressure*, and that, therefore, instead of depending as hitherto upon cathartics, the lancet and paregoric, for temporary relief, these distressing complaints, which have rendered this portion of female life a terror, may be entirely removed by such judicious mecha-

nical support, as the girdle in question is every way fitted to impart.

And here we cannot but bespeak in our own behalf, an inspection of this meechanical device, by our medical brethren ; for, surely, every member of the profession must needs welcome an auxiliary of the kind,—one which, as soon as any of the above obstinate symptoms shall prove themselves to be *non-cognizant of medicine*, is abundantly able to step forth and make a *mechanical* adjustment of the matter. For our own part, we trust we are duly thankful for the light we now enjoy, and that we shall ever be ready to make our humble acknowledgments for each additional ray. It is gloomy enough to reflect on the amount of loss and suffering, which the want of knowledge upon the subject is daily entailing upon thousands ; and, therefore, it is with no ordinary feelings that we have embarked in the dissemination of our views of meechanical support. Thousands of abortions, still-born children, bad labors, and deaths, might be prevented by the timely application of the Pelvic Girdle.

We blush to own it ; but in our early practice, we have bled our patients nearly to death to prevent them from dying, and when, too, they were absolutely suffering for want of blood, to say nothing about the greater need of it in, and subsequent to, their approaching hour of peril. And mortifying though it be, we state it in connection with the preceding fact, for the reflection of scientific men, that we have given cathartics and laxatives enough to turn the stomach upside down, and wear out the sensibilities of the patient, when, as we had the good fortune subsequently to demonstrate for ourselves, the cause of the suffering was purely meechanical, and therefore could not possibly be relieved, but by the aid of meechanical support.

The following incident led to the invention of the Girdle :

CASE 1.—Mrs. R. N., who was within a few weeks of her confinement, had suffered severely for several months, with

nearly all the symptoms we have described, including those strange sensations, running up the spine, entering the head, and, to use her own expression, "*sprangling out*," and making her feel as though she would fall down in a fit. Her spirits were of course exceedingly depressed, whilst her stomach exhibited every variety and degree of irritation peculiar to patients in this state. Indeed we had reason to conclude that she could not long survive the shock her system had received. At this juncture an *inguinal hernia*, or rupture of the groin, broke out, which compelled us to apply our Brace-Truss; for, up to this time we had not discovered the advantages of mechanical support in cases of *pregnancy*.

Shortly after this we inquired about the hernia. "Why," said she, "it is gone; but that is the least of all; for ever since I applied your Brace-Truss,* all my peculiar ailments have disappeared,—the pains in the back, head, abdomen, hips and limbs, are entirely gone, and I now feel as light as a bird." As intimated above, this circumstance greatly improved and increased our stock of knowledge. From that day forth we have advocated artificial support in cases of the kind; and, finally, we are enabled to lay before the public the surprising results, of as simple and beautiful a piece of mechanism as could well be constructed, expressly adapted in every particular to the exigencies of pregnant and lying-in women.

CASE 2.—Mrs. H., of New York, who expected to be confined in about a month, called upon us, at the suggestion of Dr. A. W., of this city, to procure a Brace to relieve her of some very inconvenient and painful symptoms, such as a depressing sense of weight and heaviness at the hips and lower abdomen, together with an involuntary discharge of urine, which things were also accompanied by great wrangling pains, and weakness of the thighs. The

* The Author's mechanical appliances are all based upon the same physiological principles.

Girdle was applied, and her complaints were soon at an end. In less than one week she was known to walk several miles a day, and on one occasion she informed us, that in exercising herself during the day, she had walked over two miles to attend a musical concert; and that whereas, for some time before she obtained the Girdle, she could find neither sleep to her eyes, nor slumber to her eyelids, she now slept so quietly and soundly during the hours of rest, that her friends were becoming somewhat alarmed, many of them honestly supposing that so great a change in this particular must arise from a morbid state of the system. It was her opinion that no married lady should be without a Pelvic Girdle; and, need we add, that this is also the opinion of the author?

CASE 3.—Another lady, Mrs. I., of Connecticut, was laboring under all the troubles peculiar to this period of life. If she walked at all, it was by leaning upon her husband's arm, and seldom, if ever, could she succeed in reaching a distance of more than half a mile. The Pelvic Girdle came to her assistance, and although it may seem incredible, it is nevertheless true, that *the most indescribably distressing and inconvenient symptoms were instantly relieved*. From that time she superintended her family affairs, which was no small undertaking, and engaged in all such labors with delight. Her husband, as might be expected, said he was "glad to find that she could now walk any distance without leaning on his arm."

Of course the Girdle cannot do *everything* in such cases, but it does what no other instrument *can* do. *It always saves much vital energy*; whilst at the same time it reads to married ladies, lessons of the gravest importance.

CASE 4.—Mrs. R., of Charleston, S. C., had suffered much from a succession of miscarriages. Immediately preceding the abortion, she would experience severe pains and weakness in the back, hips, and limbs. On one of these occasions it was suggested by her husband that the

Girdle might obviate the difficulty. It was accordingly applied, and from that moment she progressed with comfort toward the period of delivery, giving birth, for the first time in her life, to a fine *healthy* child, a circumstance which attracted the notice of a large and influential circle of acquaintance.

CASE 5.—Mrs. G., of the same place, who was constitutionally delicate, had experienced *eleven* miscarriages, by reason of which she had become greatly debilitated. By way of experiment, the twelfth disheartening prospect was met by the application of the Pelvic and Child-bed Girdle. The miscarriage was averted, and she was delivered, at maturity, of a fine boy, and has since continued in excellent health.

USE OF THE PELVIC OR CHILD-BED GIRDLE FOR LYING-IN WOMEN.

THERE is a set of ignorant midwives who ridicule the idea of supporting the abdomen after delivery, *because* they know of some who have neglected it with impunity ! Were they better acquainted with their business, they would no longer persist in this cruel method of periling the future welfare of their sex. They would know that all such neglect is attended with positive harm ; and that even though the injury may not, in many cases, be perceptible to the eye, it will sooner or later develop itself in a troublesome, if not fearful form ; they would accordingly be found striving to protect their patients, as well from remote difficulties or evil tendencies, as from immediate destructive effects.

There can be no doubt that three-fourths of the difficulties attending, or resulting from the puerperal or child-bed state, arise from inattention to the condition of the viscera, the *mechanical* relations of the same being materially changed by the sudden birth of the child. From great

tension and fullness of abdomen, or visceral elevation, ligamentous extension and tumor, the mother has passed to a state of perfect relaxation and emptiness. The abdominal muscles, the vagina and floor of the abdomen have thus ceased to resist the gravitating influences of the internal organs, and nothing is left except their natural moorings, to prevent the general descent of the viscera, as they crowd upon each other, putting their ligaments upon the stretch.

The patient is thus compelled to lie perfectly still, the least attempt to rise being frequently attended with an aggravation of this morbid state of things, such as a pulling upon the visceral ligaments, severe pain in the back, or what is familiarly termed *broken back*, weight at the base of the abdomen, general displacement and uneasiness of the abdominal organs, tension of the mediastinum and consequent pulling or tightness in the breast, with more or less pain in that region, and shortness of breath, palpitation of the heart, sinking or goneness at the stomach. and other feelings too numerous to mention.

But whilst the present style of bandaging or supporting the abdomen has been attended with some good effects, these have hitherto been clumsily and tardily secured, the bandage in common use being by no means *physiologically* adapted to the exigencies of the case, as every observant individual must plainly perceive. A towel is applied low down on the abdomen, with the view of elevating the viscera, and preventing pressure on the uterus. This bandage must pass around the hips, but the hips being higher than the abdomen, a heating and oppressive cushion must needs be laid upon the latter, so that it may be compressed by the bandage, a *small pillow* being sometimes selected for the purpose.

The reader will at once perceive, that the means here used are ill-adapted to the object stated in connection therewith. The bandage does not, *cannot* effectively prevent

pressure on the uterus. Nor is it possible for it properly to elevate the viscera. Even when judiciously applied, it simply *holds together the shattered form*; yet, however imperfectly this is done, an essential feeling of comfort is thereby imparted to the wearer. Another objection to this towel-support is, that by slipping upward, it oftentimes does more harm than good; and, though sanctioned by custom, and allowed to be better than nothing, we hold it to be but a poor expedient. A sweating, heating, chafing, irritating, movable bandage, is hardly the thing to place upon a patient in *child-bed*, who must be kept cool and airy, from the fact that this state is peculiarly susceptible of a febrile or inflammatory action.

We are now prepared to speak of our own mechanical appliance, which is in all respects adapted to the varied contingencies of the child-bearing, and *puerperal* or child-bed state. This appliance is denominated the Pelvic and Child-bed Girdle. (For some general remarks on this and the preceding kindred topic, see our description of the instrument on page 65.)

The following cases will show the superiority of this Girdle over the ordinary bandage; and also that the debilitated condition in which the female system is usually left after child-birth, may be promptly relieved by the use of this instrument.

CASE 1.—Notwithstanding the bandage had been faithfully applied to Mrs. G., in less than a week after her confinement she began to feel the most distressing sensations of sinking and faintness in the region of the stomach. These feelings were occasionally attended by a sense of dragging and goneness, from the throat down to the hips, when she could scarcely breathe. She was constantly eating and drinking, assigning as a reason for the same, that it filled her up, and materially relieved her unpleasant sensations. The least deviation from the horizontal posture aggravated her symptoms, and the *sitting* posture was in-

tensely painful to the hips and limbs. She also experienced that swimming or dizziness of the head, so peculiar to such affections. Difficult respiration, palpitation, and confusion of ideas may also be added to the list of her sufferings. Her abdomen was also flabby and pendulous, and her stomach much retracted. The bandage was constantly worn, and, in addition thereto, plasters and tonics of every variety were administered, but all in vain.

It was in this extremity, and just after a desponding fit of crying, that we were called upon to apply the Girdle. She immediately stood upon her feet, and, with her own hands adjusted the instrument, an effort which must have been attended with "fainting" and "goneness," had she not been under the influence of the Girdle. "There!" she exclaimed, "I am now well," and then walked with great ease across the room, took her seat by the fire, conversed cheerfully with her friends, and, in a few moments, partook of a repast! In three days after this she rode ten miles to visit a friend.

CASE 2.—Mrs. H., who had been delivered about three weeks, and like many others, sitting up most of the time, and moving around slowly, was said to be getting along finely, except that she was very much debilitated, and experienced considerable pain in attempting to sit or stand long at a time. At her request, the Girdle was applied in the hope of enabling her to improve a little faster. I need hardly say that her expectations were more than realized; for, no sooner was the instrument fastened around her hips, than she stepped forth, invigorated and free from pain. She commenced immediately to attend with energy to her domestic affairs, her friends being all surprised and delighted with the result of the experiment.

MORBID EFFECTS OF RELAXATION IN THE PRODUCTION OF
CHRONIC DIARRHEA AND DYSENTERY, AND CHRONIC PERI-
TONITIS, OR GENERAL TENDERNESS OF THE ABDOMEN.

THE bowels now lie inactive upon the front bone at the base of the abdomen, below the influence of muscular contraction, causing a sense of "deadness" and "weight" to be experienced in that locality ; and, if this descent does not pull down the stomach, liver and spleen, it does, to say the least, leave them to the influence of their specific gravity, in which condition they must necessarily produce a pulling or dragging upon the diaphragm and other organs above, affecting more or less the digestive powers, and destroying the tone of the bowels. Such a state of things is well calculated to result in diarrhea or dysentery, which, when thus mechanically induced, will undoubtedly resist the skill of the practitioner, and gradually assume a most distressing chronic form.

Of course there are many things which affect the bowels and suddenly produce diarrhea and dysentery, without reference to any displacement of the organs. But if these affections are not checked, they also must assume a chronic form ; for, as soon as the bowels are diminished in volume by the frequency of the discharge, they will of course recede from the abdominal walls, and, being thus deprived of their usual support, must fall to the bottom of the belly, thereby removing the stimulant or tonic influence of the muscles pressing on the viscera, and producing the same sensations as when these diseases are induced by muscular laxity. Indeed, we might as well, after all, consider this form, also, of chronic diarrhea and dysentery as having a *mechanical* origin ; for, although it does not *arise* from mechanical derangement, yet nevertheless, it clearly appears that its duration actually induces muscular debility. It is, in truth this assimilation of character which accounts for

the uniform success of the Brace in relieving these maladies without regard to their origin. The following incident bearing on this subject, is worthy of record :—

The entire crew of a merchant vessel in the East India trade, were suddenly attacked with dysentery, so that there was not a man left to stand before the mast. Several of them died. Those who survived the virulence of the disease were afflicted with a continual discharge of watery stools, the malady having evidently assumed a chronic form. Whatever was taken into the stomach was found to have undergone no change in passing through the digestive system. The evacuations were inodorous, and ejected by a spasmodic effort of the muscular coat of the bowels. The abdomen was without capacity, whilst the sense of “weight” from head to foot, and of “faintness” at the stomach, made every man feel as though life could be sustained but a little while longer.

At this critical juncture it happened, though perhaps from *instinct*, for it seems he knew not why, that one of the men put on a Russian belt, which, to his great surprise, produced immediate relief, and enabled him to attend to some of his duties about the ship. Instead of an almost continuous discharge, the number of the evacuations were reduced to eight in twenty-four hours. The facts of the case were communicated to the physician, who lost no time in supplying every man with a belt, the result of the *experiment* being about the same as that of the *accidental application*.

This shows the benefit of mechanical support in cases of the kind; and, surely the magical effect of so imperfect a thing, tells powerfully in favor of an instrument which, like the Body-Brace, is adapted in all respects to the muscular forces of the system.

USE OF THE BODY-BRACE FOR CHRONIC AND ACUTE DIARRHEA
AND DYSENTERY.

CASE 1.—Mr. D. of New York, was for years the subject of chronic diarrhea, his stools being almost incessant, and periodically attended with great severity. He was most of the time unable to leave his bed, and even when able to walk was wholly unfitted for business. He could not so much as sit erect, nor yet could he lie down, without considerable elevation of the head and shoulders, the least deviation from these necessary positions being accompanied with a sense of suffocation and shortness of breath. It also made him feel great faintness, sinking and sickness at the stomach, with a feeling that it was not only empty, but that every thing below was hanging upon it, and pulling it down. At the time we were called upon by his wife to try what effect the Brace would have, we found him afflicted with dull, dragging sensations in the breast and sides, unable to leave the recumbent posture, and fully convinced that he had but a short time to live. His calls to the stool were also of the most pressing character.

Fearing from the symptoms that ulceration of the mucous membrane of the bowels already existed to a considerable extent, the case seemed to be a hopeless one. But perceiving at the same time that much of his suffering was owing to the relaxed condition of his muscular system, and knowing that all this could be relieved *only* by the use of the Brace, we at once concluded to apply the instrument. He immediately arose, and in a few hours was seen in the street, taking a walk, as he coolly observed, “for the benefit of his health.” This gentleman has since informed us of his entire recovery.

CASE 2.—A southern gentleman, of the medical profession, now residing in this city, being greatly debilitated, called upon us during the past year, to obtain a Brace for

himself. The conversation naturally turned upon our last meeting, during the author's southern tour, when allusion was made to a conversation which occurred at the time about the use of the Brace for chronic diseases of the trunk. He said, that just before leaving home for the North, he was called to see one of his old patients, apparently in the last stage of chronic diarrhea.

After many ineffectual efforts to check the discharge, he obtained a Brace from our agent in that region, and personally applied the same; not expecting, however, to accomplish much for the sufferer, being simply of the opinion, that if our views of mechanical pathology with which he had become familiar, were founded upon a just appreciation of the laws of our physical being, the patient might be expected, even in this critical condition, to derive some little comfort from one of our mechanical appliances. But he was greatly astonished to find the thing acting like a charm. Almost simultaneously with the adjustment of the Brace, the discharges ceased, and the patient is now rapidly improving under the simple use of the Body-Brace.

CASE 3.—A merchant of New Orleans, who had for many years been afflicted with every variety and degree of chronic diarrhea, was also materially benefited, if not restored to perfect health, by the use of the Brace. When we first saw him he was unable to stand or walk without leaning upon his cane; nor did he ever attempt either of these, except from the greatest necessity; for the slightest effort to stand upon his feet was always attended with a "tight and pulling sensation from the breast to the groins," whilst standing erect would always produce a sensation like that of "drawing upon a series of adhesions from the top to the base of the trunk." To use his own words, he felt, in addition to all this, that "everything within him, stomach and all, was at the bottom of his belly." In fact, his internal organization was so completely deranged, that it

would be difficult to name a symptom of morbid relaxation which he had not experienced.

It was in this forlorn condition that the Body-Brace came to the rescue. The moment it was fastened around his hips, he walked about the room, declaring that he was "more free from pain than he had been for a long time." For the "first time in seven months he *lifted* his feet from the floor," having hitherto been obliged to *shove* them along with an outward movement, a few inches at a time, whenever he attempted to walk. His voice, which had been weak and childish, soon became full, free, and cheerful. The region of the stomach and waist immediately began to expand, and he remarked that he felt an *earnest* of great benefit. On an occasion of sickness in his family, which occurred that very night, he actually ascended and descended a flight of stairs! This was Saturday evening. On Monday next ensuing, which was election day, he started off without assistance and deposited his ballot. We shall now leave this case; for, surely it cannot be necessary to trace his convalescence any further than the *polls*.

Before leaving this subject we would remark, that the Brace has been found fully competent to the removal of those chronic and acute summer complaints, so peculiar to southern climates; for, as before mentioned, the Body-Brace is well calculated to correct muscular laxity, from *whatever* cause it may arise. We would also urge upon parents, the importance of mechanical support, in cases of *cholera infantum*; not, however, as a *substitute* for other treatment, but simply as an *auxiliary* in subduing the malady. A *swathe* should always be applied in conjunction with the Body-Brace, something stimulating being sprinkled thereon. But as children generally have fuller abdomens than adults, perhaps a flannel swathe will be sufficient without the Brace. Adults require more *lifting*

power to counterpoise the downward pressure of the organs.

MORBID EFFECTS OF RELAXATION IN THE PRODUCTION OF
SPINAL AFFECTIONS AND DISTORTIONS OF THE HIPS AND
SHOULDERS.

THE bowels having moved forward, out of the axis of the body, are now producing a leverage on the spine; and, notwithstanding the powerful antagonistic efforts of the dorsal muscles to resist this leverage, the chest, shoulders and head will be brought forward, the lungs compressed, and the abdomen enlarged.

The reader will remember, that the body, when *erect*, rests on the *processes*, or central portion of the spinal column, as in Fig. 1, and that when it habitually bends forward, as in Fig. 2, the pressure is transferred to the body of the bone itself, the elastic gristle or cartilage between the bones not being sufficient to protect them from the injurious results of so gross a violation of the laws of health. This pressure being constant and unnatural, will, if long continued, be followed by great tenderness and absorption. The rough surfaces of the bones will thus be brought together, when severe spinal irritation, ulceration, and ruinous spinal curvature will be the inevitable result.

The fatigue and exhaustion consequent upon the subjection of the muscles to such constant and extraordinary exertion, may be compared to that which we experience in ascending a hill. At first our limbs are able to double their exertions; but they soon flag; and as the top is neared, we are required to put forth the most powerful efforts to make even a small advance. When thus weakened, if compelled to struggle for a great length of time, they will become tender, tremulous, and unable to perform the simplest task. So with the muscles of the back. Strong and successful as they prove themselves in long

continued efforts to keep the body erect, they must, like every other part of the human system, eventually yield to the destructive influences of a relaxation of the abdominal muscles.

It will not be denied that spinal curvatures and distortions of the hips and shoulders have become alarmingly prevalent. It is no uncommon thing to see spines curved like an Indian's bow and the letter S, and others bulging out, backwards or forwards, whilst irregularities of the shoulders and protrusions of the hips, present themselves at every step. These distortions are most numerous among females, so much so, indeed, that they are beginning to be estimated among diseases peculiar to the sex.

Dr. Warren, of Boston, in his valuable little treatise on physical education and the preservation of health, says, "I feel warranted in asserting, that, of the well-educated females within my sphere of experience, about *one-half are affected with some degree of distortion of the spine*"! He also quotes a popular foreign writer in support of this assertion, who, speaking of the lateral curvature of the spine, says, "It is so common, that out of twenty young girls, who have attained the age of fifteen years, there are not *two* who do not present very manifest traces of it."

The same writer correctly observes, that, "Causes which affect the health and produce general weakness, operate powerfully in producing affections of the spine, in consequence of the complexity of its structure and the great burden it supports. When weakened, it gradually yields under its weight, becomes bent and distorted, losing its natural curves, and acquiring others, in such directions as the operation of external causes tend to give it; and these curves will be proportioned in their degree and in their permanence, to the producing causes. If the supporting part is removed from its true position, the parts supported necessarily follow, and thus a distortion of the spine effects a distortion of the trunk of the body."

The prevalence of spinal affections among females, is owing somewhat to the fact, that ladies sit longer at the drawing-table, and live more upon romance than upon exercise and fresh air. But the chief responsibility rests upon the present system of education, which discourages in young ladies the development of muscular strength, and teaches them to look no one in the face, but rather to observe that perfect caricature of human dignity and symmetry, the Grecian bend; and until parents see the importance of educating the *bodies* as well as the minds of their children, physical weakness and spinal deformity must necessarily abound.

The drooping or lounging attitudes which young ladies are thus allowed or instructed to assume, must, of course, relax the muscles of the abdomen, put those of the back upon the stretch, and bring more pressure upon one hip than upon the other; so that, finally, to prevent falling, the individual leans towards the hip, where there is the greatest pressure. Of course then, the axial line cannot run down the spine, but must cross the same; and, if the person is sitting upon the right hip, it must run from this point to the left shoulder, passing diagonally through the body. This unusually great and peculiar pressure upon the spine, will produce in it a curve, between the shoulders, pushing one of them outward, making it seem larger than the other, and also causing it to appear diseased, when it only wants to be put in its proper place. (See Figs. 19, 21 and 22.) See p. 188, 192, 197.

The muscular power being now unequal, and pulling unduly upon one side, the other shoulder must of course become depressed. The manner in which the antagonizing power is lost, may be illustrated by standing or resting upon one foot. It will then be perceived that the muscles of the side on which we stand are unusually active; and that in order to preserve the body in its new axis, they draw down the corresponding shoulder. Of course the

Fig. 19.

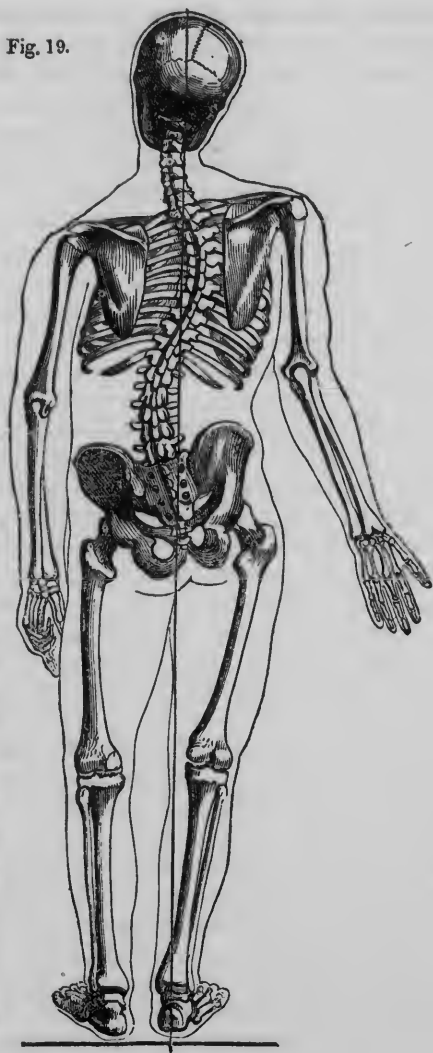


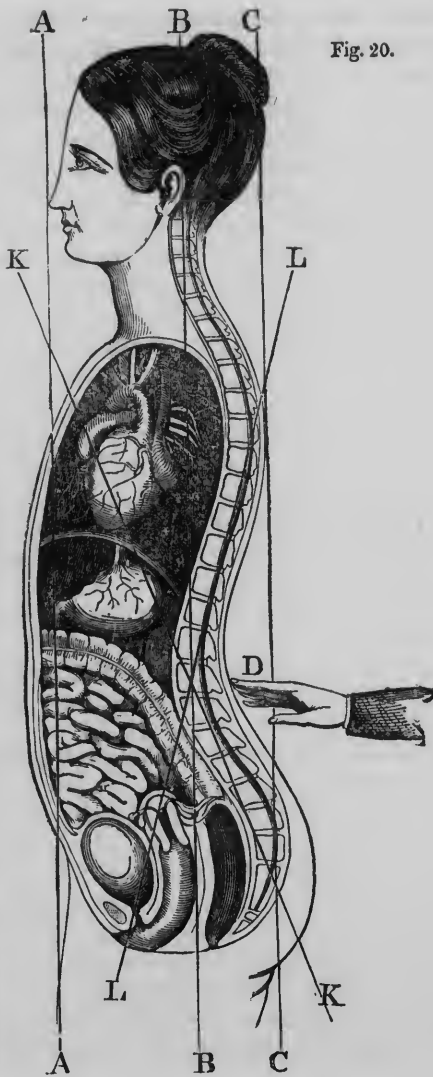
FIG. 19.—Posterior Skeleton view of the lateral curvatures of the spine, and distortions of the hips and shoulders, with perpendicular line, showing the extent of the curvatures produced by the weight of the body.

muscles of the other side become relaxed, whilst the shoulder in turn is elevated above the other. This inequality, or elevation, this "growing out" of the shoulder, as it is often called, which is always accompanied by a single or double curvature of the spine, is more common than any other spinal affection, and is often found without any visible forward drooping of the shoulders.

It will be seen by referring to our side views of the erect posture, Figs. 1 and 20, pp. 17 and 19, that the axial or middle plumb line, from the crown of the head to the feet, passes through the spinal marrow at the nape of the neck, and in the hollow of the back; that it touches the spine only at these points, and that, after leaving them, it drops through the hip, knee and ankle-joints. These points, therefore, must all be in line when the body is erect. The *head* only is allowed to move out of line, and not the shoulders. *Their drooping depends on a previous movement at the next point of motion below the nape of the neck, which is in the hollow of the back, at D.* So, also, when we bend forward or backward, it is through the agency of this part of the spinal column. This being the case, it follows that all deformity and misshape about the chest and shoulders, where there is no tuberculous or other disorganization of the spinal column, must be referred to the *hips and small of the back*.

It should be remembered, therefore, that when we lop or lounge, the *chest* does not advance or fall, as it seems to the eye; the false impression in such cases being produced by the simple fact that the point of motion, or fulcrum of the spine, recedes from beneath the chest. In other words, the middle of the body gets behind the shoulders, as clearly demonstrated by the circumstance, that in both the natural and drooping figures, the perpendicular lines touch the same points about the head and feet. So that in order to straighten the drooping form on page 18, or to effectually cure round shoulders, it is only necessary to push the mid

FIG. 20.—Side view of the elevated bowels, supporting the heart and lungs, and protecting the womb, bladder and rectum, from compression



dle of the spine at D, against the *axial* line B B, leaving the shoulders entirely undisturbed. This brings the portion of the spine which had receded, namely the *middle*, directly under the shoulders, as represented by the mathematical lines in figs. 1 and 20. p. 17, 190.

For example—Stand perfectly erect. Then let a friend place his thumb and forefinger against the spinal column, in the hollow of the back at D., and press firmly enough to resist the weight of your body. You will find it absolutely impossible to droop your shoulders in the least, or to bend your spine at any point. You may move your *head* forward, but *bow* you cannot, and, if you persevere in this effort, your whole body will fall like a straight stake, over the ends of your toes. Your friend will then tell you that in your efforts to bend your body, the hollow of your spine pressed backward with great force against his thumb and finger.

The reason why there can be no natural and voluntary or involuntary motions of the shoulders, when the hollow of the back is held in axis, is, that this point must always make an *antecedent* retreat. This is evident from the fact, that if your friend had held his fingers an inch from the spine at D, you would not only have been able to bow with ease, but your spine would have retreated to his thumb and finger, and the more you drooped your shoulders or bent your body, the harder would your back have pressed against his thumb and finger.

To render the argument still more conclusive, suppose you assume the drooping posture. Your friend will then see that the hips and hollow of the back are not in range with the center line B B, but with the third and rear line. Let him now push you firmly at D, and you will either fall upon your face, or find your back, hips, abdomen and stomach, all coming forward, the hollow of the back, and the hips, again ranging with the head and joints below, causing you to be perfectly erect, the shoulders still being,

Fig. 21.

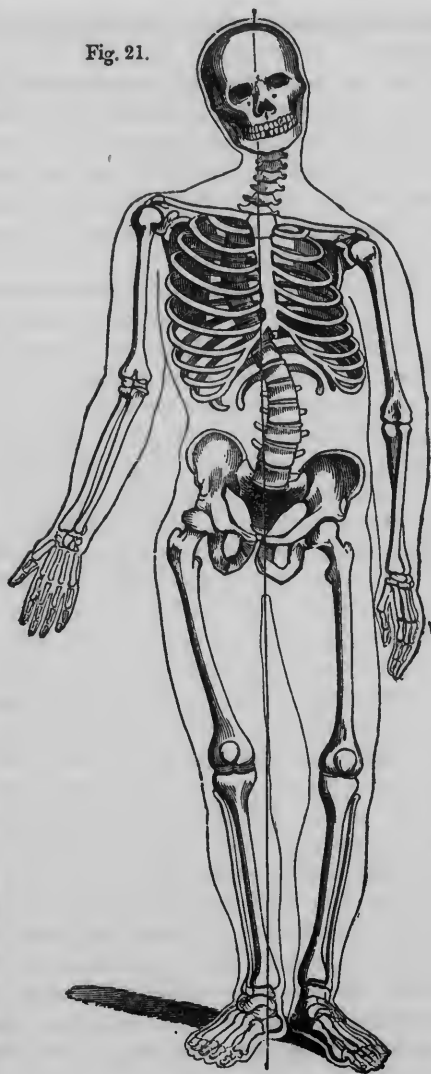


FIG. 21.—Front Skeleton view of spinal curvature, and distortion of the hips and shoulders.

as in other experiments, the same as they were before erecting the body.

We think we have now shown to the satisfaction of the reader, that in order to straighten the form of a crooked person, or habitual drooper, *the support should not be placed higher than the hollow of the back.* And we earnestly entreat all who are interested in the matter of artificial support, either for themselves or others, to make the foregoing experiments, and follow their leadings.

We have said, that "a growing out" of the shoulder always attends a lateral curvature of the spine. This is because their relation to each other is simply that of cause and effect; for, when the right shoulder is enlarged, and the left diminished, the spine between the shoulders is found bending to the right. This, at times, is so much the case, that it passes under the right shoulder blade, crowding it out of its place. The returning line of this curve, in its circular descent to the medial line of the back, forms a single spinal curvature. (See pages 192 and 197.) By following the course of this curve, it will be seen to cross the medial line of the back, describing, as a natural consequence, a curve to the left, in the lower part of the spine, which, with the former curve near the right shoulder, forms what is called a double curvature. This lower curve crowds the left hip out of its place, in the same way that the upper curve resulted in an elevation of the right shoulder. By this means, also, the fulcrum is removed from the center to the left side of the figure, whilst the serpentine course which the spine has assumed, materially diminishes the height of the body.

Spinal and Muscular Weakness.—We come now to speak of another modification of Spinal Affections, which may emphatically be termed Spinal and Muscular Weakness. This state has often been mistaken for inflammation, or genuine irritation of the spine; a circumstance which is mainly attributable to the fact, that many of the subjects

usually complain of symptoms peculiar to spinal irritation. The *error* is natural enough, but not the *treatment*. Spinal weakness is distinguishable from spinal irritation, by the absence of that intense tenderness which is usually felt in one or more of the spinal bones, and which causes the patient, on pressure, suddenly to cringe and shriek; whereas, in mere spinal weakness, this pressure simply calls forth such moderate expressions as "it is tender," "it is sore," or "it aches." This distinction between spinal irritation and spinal and muscular weakness, is of the utmost importance in the treatment of spinal affections.

The proper treatment for the relief of these painful maladies, consists in restoring the deranged or disordered mechanism of the system, to its primitive relations, which, as we shall presently demonstrate, is the legitimate work of the Body-Brace and Spinal Prop, and Spino-Shoulder Brace. And, if we are not greatly mistaken, the following cases will satisfy the reader, that whilst diseases of the spine must forever resist all efforts at *compression*, they readily yield to the principle of *support*:—

USE OF THE BODY-BRACE, SPINAL PROP AND SPINO-SHOULDER BRACE, FOR SPINAL CURVATURE AND DISTORTIONS OF THE HIPS AND SHOULDERS.

THE following cases are so much alike, that we shall speak of them collectively:—

CASES 1, 2 and 3.—Miss H. O., of Georgia, Miss S. A., and Miss A. L., of South Carolina, had, for several years, noticed an enlargement of the right shoulder. Shortly after this an enlargement of one hip was observed, and ultimately a curvature in the spinal column. These deformities rapidly increased, and soon became very extensive. When we first saw them, the right shoulder was greatly elevated or "grown out," and the left hip much projected, or enlarged. As for the spine, after leaving the neck, it

curved to the right, so far under the shoulder blade, that it could scarcely be felt with the fingers. At the small of the back it curved so much to the left, that it produced a complete double curvature. (See pages 188, 192 & 197.) Of course this unnatural and unmechanical condition could not fail to produce weakness throughout the trunk. These patients complained much of "a continual dull, stretching or aching pain between the shoulder blades, but particularly, under the right shoulder; great weakness in the left shoulder, and sense of "giving way" at the small of the back. The first symptom was caused by the spine crowding the shoulder-blade out of its place, and straining the connecting ligaments. Hence the phrase "a continual aching" or "stretching feeling." The depression and weakness of the left shoulder were caused by the loss of that support which the spine renders to both shoulders when in due position; and the *giving way* at the loins was the result of the weight and motions of the whole body bearing upon the spine.

These ladies had all visited the Eastern Spinal Institution, one of them remaining several years, and the others between one and two years. They had accordingly submitted to a great variety of mechanical applications, among which are always to be mentioned the *brass corsets*, which encircle, press, and hold up the body, together with crutches, pads, and compresses, all of which, when snugly adjusted, were confining and irksome, and acted only upon the principle of bolstering and propping up the *apex*, instead of the *base* of the pile; the idea of restoring the lost axis and proper balance of the body, so as thereby to secure a gradual improvement at the shoulders being entirely overlooked. It is true, *one* of these patients thought that by dint of *mere force*, she had been somewhat improved, but she soon found herself "lost, and good for nothing without her harness." They were much below their ordinary stature, and manifested an inveterate disposition to

droop their shoulders. In all their travels they had not once heard that their difficulties might arise from some fault at the small of the back ; and it was very hard to overcome their prejudices, and persuade them to remove the corsets, straps, and compresses, with which they were torturing themselves.

We placed our thumb against the convexity at the hollow of the back, and pushed firmly forward to the *right*, and immediately their shoulders squared back again to their proper position. This was accomplished by restoring the fulcral point of the spine to its true position, in the centre of the body. This pressure acted also upon the muscles of the back, and compelled them to draw somewhat upon the shoulders. Without removing the thumb, we then placed our left hand at the base of the abdomen, and gently lifted it upward and backward. To their great surprise, they felt stronger by this simple experiment, than they had for many years. They were equally surprised to find that they could make a *straight-forward* bow. We then removed our hands, and again requested them to bow, when they all bent *sideways*. "What a difference!" exclaimed one of them. "When supported by your hands, my loins were strong, and I could bow right straight a-head ; but now, when I bend forward, I lean all on one side, and feel as though I were falling to pieces."

The Body-Brace was applied to these patients, great care being taken to make firm pressure to the weak and re-treated hollow of the back, producing the chief pressure on the lower left curvature of the spine with the left upper dorsal pad, no pressure whatever being allowed by the other pad, upon the concavity of the right side. (See Fig. 23, p. 198.) We also gave to the front pad a great degree of lifting power, in order that the viscera might be elevated, the sides and chest re-expanded, and the shoulders supported from within.

By this means the curvatures were gradually removed.

Fig. 22.



FIG. 22.—Posterior view of double lateral curvature of the spine, illustrating the consequent deformities of the shoulders and hips, and indicating that the weight of the upper trunk must be taken off the yielding spine.

Fig. 23.

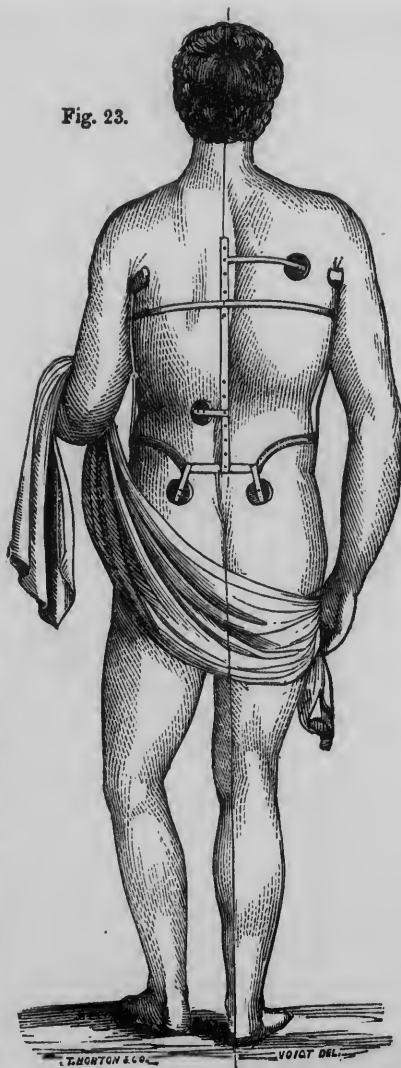


FIG. 23.—Spinal Prop, curing double lateral curvature, by lifting the weight from the curves, and by spring pads pushing the upper and lower curvatures towards the medial line of the body.

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VOIGT DEL.

Within the space of one week, the height of these patients was increased almost an inch and a half, the circumference of the chest, in the mean time being also rather uncomfortably enlarged,—their dresses having become too narrow across the breast, and too large across the shoulders.

CASES 4 and 5.—Mrs. H., of Montgomery, Ala., and Miss L. M., of South Carolina, were almost hopelessly deformed. They complained of a continual and insupportable *bearing* and *aching* pain under the left shoulder blade, together with “wrangling and grinding pains” in the small of the back, with a feeling that their backs were “broken” or “coming apart.” They also experienced great bearing-down weight at the lower abdomen, dull pains in the sides, and a sense of “sinking,” at the stomach, palpitation of the heart, and great difficulty of breathing, with severe darting pains through the lungs.

To these patients the Body-Brace was applied. Immediately they became stronger, and within the space of one week their aches and pains were entirely relieved, their figures were greatly improved, and their height materially increased.

CASE 6.—Mrs. R., also of Montgomery, was so much the subject of double lateral curvature, as to be a perfect deformity from inequalities of her hips and shoulders. It was only by aid of much padding that she could appear at all in shape. But in addition to the disfiguration, her sufferings were extreme and constant. She experienced severe pain in the enlarged shoulder, from constant stretching of its muscles and ligaments; great tenderness of the spine on the side of the concavity of the curvature, from undue pressure, and also a constant wrangling pain in the left side, similar to that in the shoulder. The debility consequent upon the weight of the body crossing the spine so often was very great. It so disabled her that she could not take much exercise, her sense of misery being aggravated by the least exertion.

The effect of this condition was powerful on the nervous system, producing melancholy, gloom, and despondency, even whilst everything around her was calculated to make her cheerful. The weight of the body seemed to be crushing the spine more and more every hour, and the patient was threatened with a most alarming stage of deformity.

The Brace was applied in this case, so as to act forwards and to the right, at the center of the lower curve, and to convert the dead weight of the viscera into a natural support to the waist and shoulders. Before leaving our office, she remarked, that the pain in her shoulders was gone, and that she felt like a new person. But that which surprised her the most, was the rapid improvement of her form, her dresses having become, like those of the preceding cases, too small across the chest, and too large between the shoulders.

CASE 7.—Miss S. A., of Richmond, Va., was from early childhood afflicted by a posterior curvature of the spine, involving the middle portion of the back. The curvature was so great as to shorten her stature materially, and to make a very large prominence of the back. Her only exercise was on a wheel chair. When we first saw her she could scarcely walk, and she experienced continual pain in the back. The Body-Brace was so adjusted as to act on the back below the curvature, pushing the small of the back forward. Its application gave her instant relief; and on the following day, which was Sunday, she walked to church, a distance of one mile, to the amazement of all who saw her.

CASE 8.—Mr. A., of Connecticut, who was a large and fleshy man, was afflicted with a lateral curvature of the spine. One of his shoulders was much lower than the other. His abdomen was full, heavy, and pendulous. He was unable to walk more than a few rods, on account of great weakness in the back. So great was his deformity, that we were about pronouncing him a hopeless case; but

we discovered that he could straighten the curvature when in the recumbent posture, or when hanging from a hook or rope.

The application of the Body-Brace took the burden off the spine, and promptly enabled the patient to keep the body erect. He continued strong and well, and was unremitting in his efforts to persuade those of his acquaintance who had any difficulty of the spine, to lose no time in making a similar application for their relief.

The following letters, which have been kindly sent to us for publication, with permission to append the names of the writers thereof, cannot fail to make an abiding impression on the public mind :—

CASE 9.—Letter from Dr. Samuel Ross, of New York.

“ TO DR. E. P. BANNING :—In consideration of the benefits derived by my son from the use of the Spinal Prop, in the case of a curved spine, and scrofulous enlargement of the abdomen, as well as from a sense of duty to anxious friends and the afflicted, and of gratitude to thee, for thy persevering exertions in bringing the invention to such perfection, I take pleasure, at thy request, in putting the facts in this shape, for the notice of the public.

“ On examination of the views advanced in thy treatise, entitled “Common Sense on Chronic Diseases,” I was induced to test the treatment therein proposed, by bringing it to bear upon the case of my son, whose bodily health was then in a pitiful and almost hopeless condition. In a very short time after this an entire change took place in the looks and feelings of the boy ; and now, after the lapse of only five months, instead of great physical weakness, we see in him much of the vigor of life ; his great abdominal enlargement has given place to an almost natural state of the parts, and, from being greatly curved and bowed down in stature, he is now comparatively straight, having gravi-

tated towards the erect posture sufficiently to have increased over two inches in height.

"I would add, for the benefit of the timid and almost discouraged invalid, that, so *scientific* and *natural* is the action of this Spinal Prop, that *at no time* has my son experienced from its use any increase of suffering, nor has he been subjected to an hour's confinement to his room.

"SAMUEL ROSS, Dentist.

"116 Chambers street.

"New York, 4th Month, 1851."

CASE 10.—*Letter from Mrs. Edwin Curtis, of New York.*

"TO DR. E. P. BANNING :—Dear Sir :—I very much regret having so long delayed expressing to you our grateful feelings in regard to our little son, who about eight months ago commenced wearing your Spinal Prop, and is now greatly improved in every respect. He is much stronger ; has grown considerably in height ; and the curve in the spine, which was so painful, even to look at, has materially diminished. At the time of our coming to you, we had but little hope of ever seeing him well. He was then suffering great pain in his back, and walked only a short distance. Now, he seldom speaks of pain, and he walks as well as most boys in good health. He has this summer, while in the country, walked from three to four miles a day. I look upon him now in the comfortable hope that his life is to be prolonged, and that while he lives he may be free from painful deformity. I never expect to see him of a *perfect* shape ; but that he may not be an object of curiosity to strangers, is a feeling which none but a mother can appreciate.

"I consider it my duty to express to you the gratitude I feel, after making a fair and successful use of your Body-Brace and Spinal Prop. And it is my earnest desire that the knowledge of your mechanical devices, which are un-

questionably a benefit to the human family, at least to the suffering part of it, may be widely extended.

"MRS. EDWIN CURTIS,

"146 Thompson st."

CASE 11.—Extract from a joint letter sent us by three ladies of Cabotville:—"We have been for several years afflicted with double spinal eurvature, so as to materially distort and enfeeble our bodies, and depreciate our comforts. By wearing your Body-Braees we have found immediate relief from our pains and weakness, and some of us from our deformity; but especially from the pain and weakness at the small of the back and between the shoulders. We would not part with the privilege of wearing the instrument for any earthly consideration. We find it a perfect substitute for the corsets and shoulder-braee, and superior to any other article.

"MRS. E. CHAPIN,

"MRS. A. MARIA LEE,

"MRS. NANCY D. TWICHELL."

CASE 12.—The following from Rev. Dr. Lyman Strong, of Colehester, was forwarded to us by one of our agents:—"In reply to your inquiry respecting the effect of Dr. Banning's Body-Brace on my daughter, I can speak with confidence that it has been *great* and *good*. The Brace has been *emphatically* a Brace, not merely in giving tone to the part principally affected, but in giving strength to the whole spine, and to the museles attatched. I am prepared to recommend the Braee to all persons afflicted with spinal affections, believing that if they are not in every instance entirely eured, their sufferings will be greatly diminished."

USE OF THE BODY-BRACE FOR SPINAL IRRITATION.

CASE 1.—Miss H., of Connecticut, a young lady, had suffered four or five years from spinal irritation, and so intense was this suffering, that the gentle passage of the hand

up and down the spine produced an awful shuddering, with snapping of the eyes, and a strange feeling in the head. She was unable to sit or to walk erect, but would lean on one side. Her mind was also confused, her head ached continually, and she could not endure the least mental application. Her stomach was retracted, the lower abdomen tumid, and her respiration very imperfect. The case had been unsuccessfully treated by many eminent men of the profession; but as soon as the Body-Brace was applied, she exclaimed, while yet in the recumbent posture, "I feel much better;" and on rising she said, "my head has not felt so clear for a year." All uneasiness was gone. She sat and stood erect at pleasure, and shortly afterwards resumed her studies, and applied herself to various manual duties.

CASE 2.—Miss F., of Vermont, a tailoress, had for years been afflicted with serious spinal irritation, with all the complicated effects of relaxation and displacement, the bearing of which upon the lungs led her physician to apprehend an organic affection of the same. Her back was very weak and sore, so much so, that she could not bear the least pressure upon it with the finger. This lady also derived instantaneous relief from the use of the Body-Brace. It was not long before there was a manifest improvement in her form, as well as in her respiratory system and general strength.

In taking our final leave of her, which was only about ten days after the first application of the Brace, she said with a smile, as she handed us the price of the instrument, "There, Doctor, you have my thanks. *That* is but a small compensation, I assure you, for the comfort I have already derived from your counsel and the Brace."

CASE 3.—Mrs. M., of the same place, had been a plague to the faculty and herself for years. She was afflicted with a most obstinate spinal irritation, affecting also the heart, brain, and almost every other part of the system. Every

degree and variety of cupping and counter-irritation was used, but all to no purpose. Finally the case was given up. In this dilemma, the Body-Brace was applied. We advised her to try the cups and counter-irritation, in conjunction with the Brace, which was approved by Dr. R., the physician formerly in attendance on the case. She would not, however, submit; therefore the Body-Brace was left in sole charge of the case; and we are proud to say, that the common troubles were all speedily removed, as well as the weakness of the spine, so that she commenced attending to her domestic concerns with a degree of pleasure and ease wholly unexpected.

CASE 4.—Miss C., of Massachusetts, was among the most pitiful cases of spinal irritation that we ever saw. It had been of three or four years duration. She had been in the hospital many months, unable to turn herself in bed. Her mind was wrecked, and almost gone. Her back was one extended line of inflammation, and her body was bent forward. The heart was subject to the most dreadful palpitations, even to swooning, on the slightest excitement of body or mind; her respiration was short and labored; her stomach could bear scarcely anything; and her bowels were constipated. She was also severely afflicted with prolapsus and leucorrhea. Her back was one extended cicatrix from cups, leeches, the moxa, and other counter-irritants. As to the treatment of her case, she was in the hands of an able practitioner. But the best he could do, only enabled her to walk about with great care and caution. She thought that if she could only breathe once more, and stand erect, she would not ask any farther aid.

We made no promises, but when the Body-Brace was applied, to her great joy she straightened up immediately, and exclaimed, "I am straight once more! I am straight once more!" She breathed with remarkable freedom; the heart's morbid action was at once allayed, and the costiveness, prolapsus, and leucorrhea, were all subdued. Her

acquaintances wondered at the change, as she ran through the village, with child-like simplicity, to tell the joyful news. The relief thus afforded will doubtless be as permanent as it was unexpected.

CASE 5.—Miss I., of N. H., was for many years severely afflicted with an irritation of the spine, so that much of the time she could not move without the greatest inconvenience and pain. She underwent the usual treatment of local depletion and counter-irritation. In the course of time she improved so as to walk a few rods, and sit up considerable of the time. She was very constipated, and her back was painful and weak. For months she had not gained at all, nor was she likely so to do, as almost every attempt at physical exercise was followed by an aggravation of her symptoms. The reason of this must be obvious enough, when we think of the unnatural load on the weak abdominal and dorsal muscles, and the increase of pressure on the already inflamed vertebræ.

At this juncture the Brace was applied. It gave instantaneous relief to the back and stomach. She immediately resumed her proper attitude; her limbs moved with cheerfulness, and in three days she walked to church and home again, a distance of half a mile, being much refreshed by the effort. In the short space of a week she had almost entirely recovered.

CASE 6.—Miss C., of N. H., had for years been severely afflicted with a serious spinal difficulty. She had long been unable either to sit or stand, so irritable was her back. She submitted to scarifications, and all sorts of counter-irritation, *by the year*, but only experienced temporary relief, the inflammation being very soon reproduced, and the muscular weakness kept up by the weight of the body on the diseased vertebræ and the already worn out muscles. The heart partook largely of the reflected influences, and the mind was gloomy and desponding. It was at this period we saw her. She could stand upon her feet but a minute or two

at a time. And yet, in one moment after the Brace was applied, she walked across the room, stood and sat up erect, and felt that her respiration had greatly improved. Her head was clear, and her mind cheerful. In the course of two or three days she rode several miles to hear us lecture, and in a few days more called at our office to express her admiration of the instrument. In parting with us, she clasped our hand, and said, "Doctor, I shall ever remember you and your Body-Brace as the means of my restoration to health."

The case of this young lady, as might be expected, produced much inquiry in the surrounding country.

CASE 7.—Extract of a letter received from Mr. George Simpson:—"When I met you on board the New England steamer, bound for Cincinnati, you expressed much surprise at the restoration of my health; and when I informed you that I was indebted to the use of your Brace for it, you said it would be very satisfactory and agreeable to you, if I would make a written statement accordingly.

"You may remember when I saw you in Raleigh, N. C., nearly two years since, I was then affected with a spinal disease, for which I was advised by the most eminent physicians to adopt the horizontal posture, and apply counter-irritants. Both these remedies failed. Having suffered much for several years, my family and many others thought my disease incurable. After I had attended your lectures, I was more than convinced that the Brace was exactly adapted to my case. I therefore bought one, and wore it constantly for twelve months. Feeling that I was nearly restored, I then began to wear it at intervals, in order that I might accustom myself to dispense with it altogether. I was not mistaken in this. But I still preserve it, though I do not think that I shall ever require it again.

"I take great pleasure in furnishing these simple facts, which you are at liberty to publish in any way you think proper. As you have been of great advantage to me, in

restoring me to health, it will always afford me the utmost pleasure to be of service to you."

USE OF THE BODY-BRACE FOR DROOPING OR ROUND
SHOULDERS.

As our remarks on Spinal Affections have completely covered this ground, and as almost every spinal subject already quoted, has been treated incidentally for this common deformity, it will not be necessary to present more than a single case of this nature.

CASE.—Dr. D. of the United States Army, who was residing at Pittsburg, called to see our "appliances for straightening young ladies' shoulders." On seeing the Body-Brace, and learning that it was applied about the hips, he became impatient, and was about leaving the office. But we managed to detain him long enough to hear a few remarks from us on the philosophy of attitude. He soon became deeply interested in the subject, and finding that he could not bow when he was pushed firmly against the small of the back, with our thumb and forefinger, he ingenuously said, "That is an entirely new view of the subject of attitude. I have a robust niece, about 16 years of age, who has no other difficulty than a rounding of the shoulders;" and then, taking the brace in his hand, he added, "I have no doubt that this will be the thing, as it practices no restraint." Shortly after this, he returned in company with the young lady, who at his request was fitted with a Brace. "There," said he, as they were about to depart, "if it remedies the evil I will pay for it; if not, I will not." About a week afterwards he called and said, "Doctor, I wish to pay for the Brace. It is a wonderful thing; a *great invention*. I have written to my son, a captain in the army, who is about to leave for the South, to lose no time in procuring one for himself."

This is far from being the only case where the author

has had the happiness to overcome opposition to the Brace, as a corrector of the drooping form. Ladies and gentlemen often say, "We can readily perceive that your Brace is just the thing, where there is any pain or weakness about the lower back, but we cannot see what good it can do, when there is only a habit of *drooping the shoulders* and *bending forward*. We have no weakness. We only want our shoulders held back." On one of these occasions, we placed the top end of a small ratan upon the floor, and pressed upon its head with our thumb, so as to bend it. "There," said we, "this cane is drooped or *round shouldered*, and yet, drooped as it is, you see the head of the cane is on a perpendicular line with the foot. This represents the case of your own body. When drooped, it is bent *backward* at the *middle* and not *forward* at the *top*. Now if you push the middle or hump of the cane forward, you not only straighten its form, but actually compel the head of the cane to rise and press upward against our thumb. So, also, in the case of your body, if you will but press upon the small of the back, your shoulders will become erect, and your height will be increased."

We had no further difficulty in making them understand that support at the lower back and abdomen effectually removes the unsightly appearance of round or drooping shoulders, and produces that expansion of the bust which now requires so much cotton wool and hair to imitate.

But, whilst, as we have now shown, the Body-Brace is perfectly adapted for the cure of Drooping or Round Shoulders, it will be seen that its work is performed by the persuasiveness of its promptings to physical uprightness, and not by *coercion*. There are many cases, however, which require a more compulsory action; cases which imperatively *demand* that the application of the principles of the Brace be brought to bear *immediately* upon the *shoulders* of the patient. This class of cases is composed, in part, of those who *refuse* to co-operate with the Brace, in

pushing forward the hips and small of the back, over the ankles and under the center of the head; who are altogether too *lazy* to appreciate a gentle hint, or even to *get out of the way of the Brace*, and thus allow it to do its own work, by holding the fulcrum of the spine or *point d'appui*, against the axial or middle line of the body, as shown in Figs. 1 and 20, Letter D, pages 17 and 190. But this class of cases is more especially composed of very feeble consumptives, the pectoral and spinal weaknesses of whose sinking frames call for *additional* support, and whose ligamentous and muscular laxity and loss of tone are so extreme, along the whole course of the spine, that they have no power to prevent the weight of the head and chest from forcing backward the supporting pad of the Brace at the small of the back, and thus compressing the lungs.

We have always felt the need of an instrument to meet the exigencies thus constantly presenting themselves to our view. But the difficulty has been to construct something that should be entirely free from the objections urged against the common shoulder-brace. This *desideratum* we are happy to announce is at length supplied in our *Spino-Shoulder-Brace*, which we cannot but regard as an appliance of inestimable value to the afflicted. For a description of this invention, the reader is referred to the following article.

USE OF THE SPRING SPINO-SHOULDER-BRACE FOR HABITUAL DROOPING, AND FOR EXTREME WEAKNESS OF THE SPINE AND CHEST.

THE reader must not conclude that we have imitated those shoulder-brace manufacturers, who vainly expect to do good to their fellow-men *by simply pulling back their shoulders*, an operation which makes each shoulder a fulcrum for the other; so that the whole action of the harness *begins and terminates between the shoulder blades*. This ex-

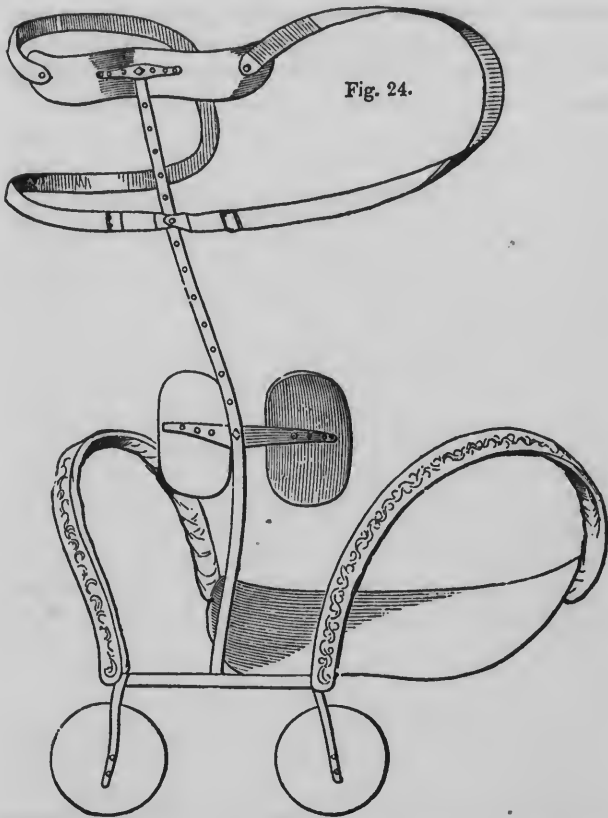


FIG. 24. *Spring Spino-Shoulder Brace, for supporting the weak abdomen and back, erecting the body and correcting the habit of drooping. For expanding the chest and supporting the lungs, and arresting the progress of lung and spinal diseases. See "Common Sense."*

periment for restoring the natural shape of the spine, would be about as likely to succeed, as would that of the individual who should seize hold of his waistbands, for the purpose of pulling himself up into the air. No, sir! Our Spring Spino-Shoulder-Brace does not *pull back* the shoulders; for *all* the power generated in the whole apparatus, *unlike* that of the common shoulder-brace, is spent at the small of the back and the base of the abdomen. And, when this instrument seems to the eye to be *pulking* at the shoulders, it is in reality, as we shall presently show, pressing inward and *pushing* effectually forward *the retreating small of the back*, the antagonistic points being the same as those of the Body-Brace.

It is, indeed, a *great mistake* to suppose that the shoulders require to be *pulled backwards* in order to straighten the form. It is only necessary, as we have abundantly proved, in our mathematical diagrams of the erect and drooping postures, to apply such force to the small of the back, as will hold the spinal fulcrum firmly against the axial line, in order to prevent the said fulcrum from getting behind the *true* center of gravity, and making it appear to the eye that the shoulders and head are leaning over in front of the fulcrum of the spine; whereas these points are merely *let down* by the *antecedent* retreating motion of this fulcral point in the middle of the back. (See pages 17 and 18.)

But as it often requires more force than the Body-Brace can exert, to hold this fulcrum against the axial line, we have extended the *standard* of the Brace up along the spine as high as the shoulders, so as to make *an additional fulcrum* at this point. (See Fig. 24, page 212.) This standard is curved outward at the top, and inward at the small of the back; so that when placed upon the body, its upper extremity is several inches from the shoulders. In other words, whilst the lower part of the standard is made to fit the hollow of the back, its upper part springs away *from*

Fig. 25.



FIG. 24.—Spring Spino-Abdominal Shoulder Brace, for supporting the chest and upper spine, and curing habitual drooping or "round shoulders."

the shoulders. A neat, soft strap is then passed over the shoulders, which draws the spring firmly up to the same, and compels the pads at the small of the back to increase their forward action, until the retreating fulcrum of the spine is effectually *pushed* against the axial line under the center of the head.

In cases of local weakness of the spine, still higher up than the small of the back, additional *spring-pressures* are extended at any point of the long standard, either with or without the galvanic attachments described on page 68. It can scarcely be necessary to prolong these remarks. But before leaving the subject we would direct the attention of the reader to the following

CASE.—Mr. E. H., of Brooklyn, had been for several years seeking effective support to his compressed and flattened chest, and his extremely long, weak and bow-shaped spine, by the application of shoulder-braces and supports of every description, but without the slightest prospect of success. As soon, however, as the simple Body-Brace was applied, he experienced relief at the small of the back; but, placing his hand upon his breast, he said, "I am so weak up here, that I fear I must have some additional support. I want capital to commence with." The Spring Spino Shoulder-Brace was accordingly applied, *with two sets of supports along the back*, when he enthusiastically exclaimed, "*Now, Doctor, you've got it.*"

Some months since I attempted to fit a dear young friend with the Body Brace, who was pulmonic and much emaciated. The Brace proved uncomfortable to him, slipped out of place, and would not "keep him up" as it does in ordinary cases. He refused to wear it. Recently I reapplied it with the Spring Shoulder attachment, to his great comfort.

Recently he writes to his mother: "What a comfort my Brace is! it is perfectly easy, and supports my abdomen,

back, breast, and shoulders completely. Sometimes I go without it; but when I get it on again I hardly know myself, so great is the difference between John in the Brace and John out of the Brace."

Miss E. N., a young lady of scrofulous constitution, recently applied the Spring Shoulder Brace with the most pleasing results. She was but fifteen years of age, had grown rapidly, and from extreme scholastic labors, had contracted a very drooped appearance of the shoulders, flattened chest, and hollowness at the stomach, with every appearance of an advancing consumption. She experienced much heat and pain in the chest, with cough, labored respiration, and palpitation of the heart, etc.; also an overpowering propensity to lean forward. In short, for a perfect illustration of her general appearance, consult Figure 3 of this Essay.

But a few days have elapsed since this new Brace was applied, and yet it is surprising to see her now moving about, perfectly erect, plump, and symmetrical—with elasticity in her step, and with freedom from pain and cough. Her chest has also increased very much in size.

In all cases where the lungs are implicated, I think this variety of Brace should be used; and also, on children, who will not voluntarily coöperate with the ordinary brace in cultivating a proper posture. Indeed, it seems now most likely that this will be the most popular instrument of the two.

USE OF THE SPRING SPINO-SHOULDER-BRACE ON HUNCHBACKS AND SPINAL WEAKNESS.

In other pages we have spoken of the treatment of spinal curvatures by the *Body Brace*, and the *Spinal Prop*—more

particularly the latter—which operates chiefly by elevating the weight of the body off from the weak and yielding spine. But, there is a most extensive class of spinal derangements made up of infants and weak boys and girls, where the curvature is wholly posterior, and consists in a more or less sharp protrusion of one or more of the back bones, causing the weight of the body to break across the spinal axis, and thereby to perpetually increase and aggravate the commencing deformity, in a most natural way. This condition usually commences and operates long before the adult patient or friends of the infant subject are aware of it, and ere the true nature of the case is ascertained, both the health, strength, and nervous energy are greatly undermined, and the difficulty of removing the disorganization and of restoring the patient's prospect of strength and a perfect form, are greatly enhanced. The locality of this weakness may be at any point between the neck and the base of the spine. The effect of this state is practically that of a **BROKEN BACK**. The patient (if an infant) is very fretful and restless, and demands to be continually nursed, and only certain positions will answer. When sitting on the lap or seat, the back hunches much, the shoulders round, and the whole form has a "dumpy" look, the body falls down upon itself, as it were, and the child feels relief from the support of the hand at the small of the back and the upper part of the breast whereby the pressure is taken off from the shortened *body* of the spine, and the strain removed from the posterior and elongated portion of it and its relaxed and exhausted ligaments and muscles. The whole aspect of the patient's features is that of distress and protracted agony, eliciting the most painful sympathy from the beholder, and the most heart-rending anxiety and so-

Fig. 26.



FIG. 26 represents a case of incipient "hunch-back," or posterior spinal curvature, continually increasing and becoming more hopeless by the weight of the body crushing the weak or diseased spine, and breaking at a leverage across the body's axis.

citude from the parent, often extorting the involuntary exclamation, "POOR THING, I PREFER TO SEE YOU DEAD AND OUT OF TROUBLE." If the subject has commenced to sit alone and to walk, then the symptoms are more marked and different, and might lead to the discovery of the true nature of the case. Although the local derangement is so small as to not yet attract attention, he will habitually sit with his elbows or hands resting on the arms of the chair or upon his knees, and will usually prefer to lie upon the mat or floor. Also when standing, he complains of "pain in the back" or "BACK ACHE," and seeks relief by resting his hands upon his hips or knees; only erecting himself momentarily on occasions that call for it. Too often, the case is not made up purely of a mechanical curve or debility of the spinal ligaments and dorsal muscles, but is also attended with more or less inflammation, irritation or tenderness of the parts, and a tendency to a softening of bony tissues. When this is the case, there is usually a great aggravation of symptoms, owing to the direct and sympathetic implication of the several systems of ramifying nerves. In this state of things a serofulous condition is usually at the foundation of the whole matter, and should, from the very start, receive constitutional attention in connection with common sense and mechanical means.

These cases, if neglected or maltreated, are apt to progress to abscess or caries of the bones concerned, and to wear out the patient by exhaustion and protracted suffering, or else, to terminate in great and remediless deformity, death being welcomed as a sweet release from their sufferings. When the above symptoms manifest themselves in the infant or the adult, the parent or physician should pass his hand carefully down the spine, and he will usually find

one or more of the vertebræ (or back bones) standing out like a "*knuckle*," more sharp and prominent than the rest. Or perchance it may start out of line to either side, both with or without the above. If he press firmly he may find one point where there is tenderness and indications of actual disease, and a preparatory start for the more *physical* developments. Now let the interested reader hear *that hath ears to hear*. From the moment that either of these discoveries are made, not an *hour* must be lost, in bringing the most rational medical and constitutional means into requisition. The first indications are, to elevate and brace up the enlarged and dragging abdomen, and to take the strain and pressure from the weak point or curvature, by means of a joint pushing by pads at either side of it, on the soft parts, and the drawing back of the shoulders by a spring in connection with the spinal support. (See cuts, p. 1.)

It is truly surprising how the most distressed countenance of the little sufferers is often, in the space of an hour, turned to that of ease and quiet.

CASE 1.—Master W., aged three years, was brought to me for relief. He was not able to stand more than eight or ten seconds, and that in a very deformed position. His features and whole expression and demeanour were expressive of constant fatigue and continuous distress and agony. His back was much curved backwards, his shoulders were thrown forward, and his head thrown back, with his face upwards to maintain its balance. (See Fig. 25.) In this condition, a plumb-line dropped from the crown of the head to the ankles, showed the middle of the body to be far retreated behind its proper axis, as explained in Fig. 2, p. 28. By this means, the body's weight pressed across the curvature, with a great leverage, continually increasing

Fig. 27.

FIG. 27 represents the "hunch-back," being perpetually straightened and strengthened by the spring spino-shoulder brace. Its front pad lifting the dragging bowels, and the posterior spring pushing the hunch forward, and drawing back the shoulders, thereby taking the strain from the spine and muscles.



the curvature, and producing great compression of the body of the vertebræ or back bones, and an exhausting stretching of the muscles of the back and spinal ligaments, which latter was the secret of the constant expression of unmitigated weariness and distress. To this patient I applied the *Spring Spino-Shoulder-Brace* (See Fig. 26) so as to lift the settled and lower abdomen, and compel the sinking and depressed viscera to actually be elevated to expand the chest and support the shoulders; also, so as to press forward flexibly upon the retreating hunch, and act by taking off the strain, just as the hand acts on any aching back. This action I increased by drawing forward and attaching to the shoulders the upper end of the strong spring, which, by its continuous effort to spring back to get rest, kept up a constant drawing back of the shoulders and pushing forward of the hunch. Within a week he was again presented; his countenance was now calm, placid, and cheerful; he was playful and happy, and ran across the floor to show the "*dood dotter Ban*" what he could do. He is going on now, perfectly free from distress, to continually and gradually improve.

I ought, perhaps, to remark, that he had worn several varieties of the ordinary spinal corsets and supports, without avail. This case is a fair type of numbers of others, all of which are so similar as to make it bare repetition to describe them.

CASE 2.—Mr. Watkins, aged 45, was the subject of posterior spinal curvature, (See Fig. 25, p. 212) and had visited an institute at Rochester for its relief, but with only constitutional benefit. He expressed himself as suffering from a constant aching, wearing, and dragging pain, and sense of fatigue and nervous prostration—said he was "breaking

down at his middle." In addition to his curvature, he was compelled to throw back his head and turn up his face in a manner that added to his deformity. On the application of the Spring Spino-Shoulder-Brace so as to elevate the depressed abdomen, draw back the upper trunk and press vigorously on each side of the hunch, he exclaimed, "There, that seems something like it. It touches where I want to be touched and nowhere else, and does what I want done and nothing else." He also added, "I have worn other fixtures vastly more complicated, heavy, and irritating, with nothing like this kind of relief, and yet I am almost perfectly at ease and liberty with this."

This case also is the just representation of numerous others which it would be superfluous to narrate. I close my remarks on spinal weaknesses and deformities by saying that I believe that such is now the perfection of my various devices for their relief, that by the joint aid of them and systematical use of cold water and a little medicine, vigorously and symmetrically carried out, I am able to meet this hitherto opprobrious and distressing class of maladies; and I ardently hope very soon to complete arrangements for a commodious institution, where the afflicted may find a home to remain for the carrying out of the curative process in its several departments under my own eye.

USE OF THE BODY-BRACE FOR HEMIPLEGIA AND PARALYSIS OF THE LOWER EXTREMITIES.

CASE 1.—Mr. C., of N. H., had for several years been afflicted with hemiplegia or paralysis of one side of the body, and had become almost helpless. One arm was motionless, and the other partially so. He was hideously distorted by the muscles of the diseased side. His bowels

could be moved only by the use of the most powerful cathartics.

By the aid of his mother, who was a person of great strength, he could crawl or draw himself across the room. His sense of *soreness* at the stomach, pain in the center of the breast, and weight at the bottom of the abdomen, was very great and inconvenient. In this case the question was not whether the hemiplegia could be cured by *mechanical support*; but whether by supporting the atrophied and flabby muscles of the back, and lifting up the much sunken belly, so as to take the weight off the spine, his physical energies could be materially increased. With this simple experiment in view, the Body-Brace was applied, and in the same hour he walked across the room, though with great difficulty, to be sure, as must every distorted, paralytic man. He rose from his chair with more alacrity, breathed much easier, and was greatly comforted and improved in many other respects. In the space of two days his bowels were moved, notwithstanding he had taken no medicine whatever, and they have ever since continued in good order. The experiment, therefore, was entirely successful.

CASE 2.—Mr. G. H. had for many years been perfectly paralytic in his lower extremities. He appeared to have no irritation of the spine, or any other local or constitutional disease. He had undergone every variety of treatment that the oldest and ablest of the faculty could suggest; but still, he was unable to bear the weight of his body on his limbs. As soon as the Brace was applied, there was a manifest improvement of the case, and in less than three weeks he could sit erect and walk across the floor by the aid of his crutch and cane. His spirits were also much improved, and, when we last saw him, he was in a fair way to recover his health.

This case affords a striking illustration of the anti-gravitating power of the Brace in enabling nature to exert her flagging powers for the restoration of her disordered functions.

CASES SHOWING THE SUPERIORITY OF BANNING'S BODY-BRACE
OVER THE BRASS CORSET, IN THE TREATMENT OF SPINAL
AFFECTIONS.

THE following cases of spinal irritation and distortion are presented in this separate form, in the hope of attracting more *special* attention to the importance of the facts therein contained. They show conclusively, that those persons who cannot sit or stand from weakness and distortion of the spine, can *never* be cured, by providing a leaning-post for their convenience, or by so placing them between screws that they are unable to fall; for in the one case, muscular action is prevented by compression, and in the other, the muscles become more palsied by doing for them what nature herself is desirous to do. And here it may be well to remind all concerned, that there is a vast difference between assisting or gently encouraging a muscle by artificial support, and *taking the work entirely out of nature's hands*.

In these cases the patient straightens, because he cannot crook. He stands, because he cannot fall, whilst the weak muscles are gaining nothing by exercise and partial support. We see, then that steel or brass jackets only tend to perpetuate the evil, if indeed there is any energy left. He depends entirely upon his shoulder strap, and when it is removed, he is lost, and immediately droops down again. But the Body-Brace takes the weight off the spine, through the lifting up of the body, and causes the abdominal organs to push back the chest instead of dragging upon it. It also strengthens and renders more tense the muscles of the back, by pressing them towards the spine, and causing them to pull back the shoulders, thus causing as much weight to rest behind the axis of the body as before it. In this way the body is held in its normal state, resting on its axis or point of motion, namely, the spinal processes of the bones in the small of the back, the weight being

equal on all sides. By this means also, all the organs are preserved in their mutual bearings. Nor is this accomplished by depriving the muscles of their use and proper exercise. They are *all* at liberty, and in a situation where they may act according to circumstances. In other words, the Brace, while it serves as a prompter to correct muscular action, is injurious to no muscle; and when the resources of the system have sufficiently increased, it is to be laid aside.

It is not *bracing* or *holding* strength that we want in cases of spinal irritation and muscular weakness, but *lifting* strength, to take the weight off the spine, and leave the muscles at liberty, so that they can exercise themselves and rouse their dormant powers. After this has been accomplished by the faithful use of such appliances as we have brought to bear upon the mechanical derangements of the system, then, and not till then may depletory and counter-irritating treatment be used with any prospect of success.

CASE 1.—Miss P. was afflicted with irritation and distortion of the spine, and placed herself in an institution which gave special attention to these complaints. She wore a brass corset or jacket which covered her back entirely, and nearly reached around her body. When snugly laced with the same, she could remain quite straight by leaning upon it, but on removing it she was “lost and gone.” Having buried a sister who had died under the ordinary treatment of these brass stays and this severe lacing and pressure, she began to fear, that unless she could find relief in some other way, she also would soon be laid in the grave.

These unpleasant reflections resulted in a determination to try one of our instruments. The Body-Brace was accordingly applied, and immediately she declared, that the actual support which it gave, was infinitely greater than that of the corset. Having also more liberty and ability

to indulge in physical exercises, the palsied muscles were soon called into use; her original attitude was gradually resumed, and before many months had elapsed, she was again the sportive and beautiful daughter of health; "the rose once more blushed upon her cheeks, the sweetness of the morning breathed from her lips, joy sparkled in her eyes, and cheerfulness appeared in all her movements."

CASE 2.—Miss E., of Southbridge, Mass., who had been an inmate of an institution for the treatment of spinal affections, had worn the brass corset for several years. It served truly to hold her up considerably, for she was terribly deformed, but, at the same time, its comparatively immense weight was the means of her becoming completely emaciated. Ever in pursuit of the means of relief, sick of the present experiment, and almost worn out in body and mind, with a succession of hopes and disappointments, she resolved, after hearing a public lecture from the author, on the nature and treatment of spinal affections, to test the correctness of what she had heard.

The ponderous corset was accordingly removed, and the Body-Brace applied. Instantly she declared that she felt much stronger, though she acknowledged herself to be "somewhat lost without the corset;" yet, notwithstanding this, its brazen form was never again laced around her body. The use of the Brace was perseveringly continued, and in a short time she was tripping about with her family and friends, comparing the toils and dangers of the brass corset with the "inestimable benefits of the Body-Brace."

This sudden and extraordinary result was produced—

1st. By means of the lifting power of the bowel-pad of the Body-Brace, which, by its physiological action, at once removed from the weak muscles and curved spine, the crushing weight of the body.

2d. By the peculiar action of the back pads of the instrument, in pressing forward the small or movable part of the back, so as to hold it in axis, or rather in its natural

position, as may be seen in the healthy subject, by referring to Figures 1 and 20.

3d. By the additional use of these fulcral pads, in holding against the back, by their elastic pressure, the elongated dorsal muscles on each side of the spine, thus drawing or throwing back the shoulders, without the restraining influence of any *pulling* application to the shoulders themselves.

Thus it appears, that whilst the brass corset *holds the body up and keeps it in destructive idleness*, the Brace makes the body *hold itself up*; and that whilst the corset is weighty, oppressive, and altogether inconvenient and injurious, the Body-Brace is light, cool, convenient, easy of application and removal, affords prompt relief, and in a very brief space of time, either effects a cure or indicates with admirable precision, by means of its perfect imitation of the muscular forces, the final result which is in store for the patient.

USE OF THE BODY-BRACE FOR CHRONIC HIP DISEASE.

MANY persons are afflicted with what is termed "*sciatica*," which is a neuralgic affection of the sciatic nerve. It is a most distressing complaint, and often results in drawing the hip entirely out of joint, causing it to become much enlarged, and greatly shortening the leg. After the acute symptoms are past, the patient begins to move, but not without great difficulty. He feels that his hips are coming apart, and that if he could only have something that would relieve the strain produced by the weight of the body upon the weakened hip, he could walk with ease and comfort.

Others, who have been afflicted with lumbago, or lumbar abscess, and who have become emaciated and exhausted by suppuration and long continued running of the abscess, find their loins and hips so weak as to render it impracticable for them to take the requisite exercise for

the preservation of health ; all attempts of the kind being attended by an irritation of the parts affected. The healing of the abscess is thus retarded ; and it is this circumstance which gives rise to the chronic nature of the disease under consideration.

Now it must be evident that whatever will support the back and loins, and bind together the hips, must give firmness to all the parts concerned ; and this view of the matter is materially strengthened by the sensations of the patients themselves, as clearly indicated in the above allusion to their feelings. Indeed, our own observation and experience compel us to say, for the encouragement of the afflicted, that in some instances, persons hitherto incapacitated, have, by the use of the Body-Brace alone, been enabled, at once, to move about with pleasure and profit. It is true, that the majority of cases which we have treated, have been of a moderate character ; but still they have been uniformly attended with success, and this success has often been in the shape of *immediate relief*.

CASE 1.—Mrs. K., an aged lady, had met with a fracture of some part of the hip joint, and for many years had not been able to walk a single step without the aid of a firm crutch and cane ; and even then, it was truly painful to see her move, as she presented the appearance of a person stepping upon a limb, with the hip joint nearly wrung off. The Body-Brace was applied to this lady, and to the astonishment of herself and friends, her hips were so much strengthened that she immediately laid aside her crutch and cane. Without limping, and without any other aid than this simple mechanical appliance, she walked all over the city.

The author is fully convinced, that in all chronic affections, involving weakness of the hips, if the sensibilities of the patient will allow of the presence of the Body-Brace, it should be used as an *auxiliary*, if not as a cardinal relief.

USE OF THE BODY-BRACE FOR GENERAL DEBILITY, OR SPINAL AND MUSCULAR WEAKNESS.

CASE 1.—Mrs. Col. Brown, of Massachusetts, had for years been confined to bed with spinal and muscular weakness, or as it is more fashionably termed, *general debility*. She was of course ineligible to those physical exercises which were calculated to invigorate the system. Experiencing but little pain when quiet, her symptoms were so ambiguous and obscure, that her complaint was called by many different names. Her lungs, heart, stomach, and bowels, as well as the female nervous and spinal systems all partook liberally of the derangement. Her digestive system was much enfeebled, and the assumption of the erect posture invariably produced great difficulty of breathing, dizziness of the head, palpitation of the heart, and an “awful sensation of oppression, sinking, and faintness;” or, as that class of patients more frequently express it, “all goneness.” If not immediately laid down on such an occasion, a perfect swoon would ensue. In connection with these painful symptoms, any effort at motion produced great sense of “weight and bearing down” at the lower abdomen, with a dull pain in the sides and small of the back, and a feeling that the hips were coming apart. Her limbs were almost powerless. In this condition she was conveyed to our office, in the horizontal posture.

It was quite apparent that this case was pretty nearly made up of muscular debility, and that the “melee” among the functions was the result of a general breaking up of the natural and upward bearing of all the parts. As soon as the small of the back was *firmly* supported, and the sunken abdomen effectually *lifted* up, her strength was greatly increased. She rode home the same day with greater ease; from which time a gradual recovery commenced, and she ultimately resumed the management of her domestic affairs.

This lady had undergone a vast amount of treatment by alteratives, stimulants, anodynes, and counter-irritation. But time itself was found to be too short for a cure by any means which did not act directly upon the mechanical nature of the malady.

CASE. 2.—Mrs. S. came to Savannah, Ga., to be treated for an affection of the spine. She had been four years confined to the house, and for two years had not been able to stand alone. Great gloom, melancholy and mental depression overspread her whole nature. There was much pain and tenderness in the spine between the shoulders. She said, that in attempting to stand, the pain in her back was greatly aggravated; that she felt that she “had no back about her loins;” that some of the joints seemed missing, whilst others were grinding together;” that her “hips seemed coming to pieces,” and “that everything within fell to the lower part of her body.” We also found the abdominal muscles exceedingly flabby; and her whole system gave the fullest evidence of a general letting down of all the powers of life. The Body-Brace was applied while she was in the horizontal posture. As soon as it was properly adjusted she arose, and stood upon her feet, with very little assistance, having found her limbs stronger within the space of a few minutes. In a short time she walked a few paces, and after looking around with evident surprise, she exclaimed: “How strange it seems! I am absolutely relieved of all my painful sensations!”

This patient took little or no medicine for the space of a month; at the end of which time, being cheerful and comparatively strong, she returned home, *walking from her room to her carriage*. We have since been informed that she has almost entirely recovered her health.

USE OF THE BODY-BRACE FOR WEAK AND DEBILITATED CHILDREN AND YOUTH.

WE cannot refrain from adverting in this place, to the influence of relaxation upon children. There are a great number of children, especially in cities, among the rich, who early exhibit signs of debility by their pale skins and soft muscles. As a general thing, it will be found that the cultivation of their minds has been begun at too early an age, and consequently the mental faculties have become too much developed, for the welfare of the body. They complain, too early in the morning, of fatigue and languor, and manifest a disposition to lounge upon the sofa, &c. Their shoulders soon become drooped or rounded, and the stomach retracted, the abdomen being tumid or emaciated. The breast, it may be, is pushed out like rickets, the lungs give some evidences of predisposition to disease, and the bowels are either constipated or lax. The child goes on, and either grows too fast, or perhaps not fast enough.

This state, however, is more common to children from ten to fourteen, but it occurs in every period previous. The parents are concerned about the *decline* of the child, and too often there is good reason so to be, as this is a kind of turning point with the vital energies, after struggling some time for the ascendancy; and, should they not prevail, the *Rubicon* will be past, and the termination be too often unfavorable. At this juncture, a gentle influence in nature's favor, aiding her *organic* relations, will cast the die in favor of the patient.

We have often been consulted respecting such children, by anxious and indulgent parents. These juvenile patients love the house, and assume manly and womanly attitudes and manners, physically and intellectually; show an indisposition to romp or play, and complain of prostration and headache after very light exercise. When you come to

examine them critically, scrutinizing every organ, you will probably find no organic or primary derangement. But take a natural and superficial, yet understanding view of them, and you will see the trouble plainly before you. The fiber generally is soft and flabby, and the body is being crushed by its own gravity. If you lift with one of your hands the abdomen of such children, and with the other press against the small of the back, the child will breathe easier, and feel better.

There is another tender class of sufferers to which allusion has already been made, whose physical condition calls for some improvement. We refer to those infants who are unable to walk, stand, or sit, when their age, size, and other developments, indicate a very different state of things. Of these there is a great variety. With some the difficulty seems to be, a want of power about the back; and with others, a weakness of the legs. Others again exhibit an inability to balance the body on the ankle joint. These cases always excite much alarm on the part of parents, who often unwittingly subject their children to very improper appliances for relief. In view of such things as these, it is matter of the highest satisfaction to us to be able to assure parents and others who have the care of children, that in no department of suffering, has the Body-Brace been used with more gratifying results, than in the one now under consideration, namely, the physical weakness of children and youth. And let not parents forget that, whatever may be the apparent cause of debility in their offspring, they may rest assured that anything which pushes forward the small of the back, and lifts the enlarged and sunken abdomen, is the first means that should be resorted to, and also that there will be an immediate improvement in the use of the limbs. A few cases on this head will suffice.

CASE 1.—Several years ago we met with Miss H., aged 13, a beautiful and interesting girl, of lymphatic form and temperament, fair skin, and plump and soft flesh. Her

limbs were always weak, her back tired, and her head generally aching. Her ambition was very great, and her attention had been too early directed to music, literature, and womanly employments, rather than childish sports. Her abdomen was tumid, and her bowels alternately constipated and lax. She had considerable cough, and severe pain in the chest. Much alarm was justly excited about her, for consumption was evidently waiting its opportunity to make inroads upon the system. But no primary disease of any organ could be detected. We decided the case to be one of general organic laxity, calling for support, fresh air, frolicsome exercise, and entire abstraction from intellectual effort. All this was properly attended to, and the Body-Brace applied, which at first created some irritation, but soon felt comfortable. In one week's time she was a different child; her spirits had returned, her countenance had lost its gloom, the pain of the head, breast, back, and limbs was gone, and she could endure any amount of frolic and fun. So great, indeed, was the change in this short space of time, that no further anxiety was manifested about the case.

Quite a long time after this, while on a tour to the South, we were invited to deliver a lecture before a seminary of young ladies. At the close of the lecture, a symmetrical, healthy looking young lady, stepped forward and said, that she owed her life and health to the use of the Brace; and as we did not recognize her at first, she informed us that she was Miss H., of Middlebury, Vt., who was on the verge of the grave, when, so much against her will, the Brace was applied. "And now, Doctor," she added, "*I am in perfect health.*"

CASE 2.—Master M., of New York, was much distorted and weak, indisposed to exercise, and easily fatigued. When he stooped or bent, he leaned on one side. He also suffered severely from pain in the back. He said that the application of the Body-Brace made him feel much stronger.

His form is now greatly improved and his strength almost entirely restored.

CASE 3.—Master W., of Charleston, S.C., aged ten years, was brought to our office. He was of slim and delicate frame, with an uncommon development of brain. He complained much of languor and fatigue, and was always attacked by headache and fever, in applying his mind to exercise or study. He was also grave and manly in his deportment, and did not possess that cheerfulness and playfulness which belong to a child. Had he continued a year or two more under the same downward influences, he would have been a candidate for spinal curvature, and, in all probability, for fits also, as the head had become the center of vital attraction, and was robbing the body of all its energies, while his muscular system was letting down the whole weight of the body upon his slender spine. The mother of this boy was alive to the danger of his condition, and was about to take him to the country for a change of air.

Seeing precisely the mechanical nature of his troubles, we persuaded her that he also needed a Body-Brace to strengthen his loins, support his back, and lift the enlarged and sunken abdomen, so as to draw back his rounded shoulders, and expand his contracted chest. We illustrated the action of the Brace, by lifting the abdomen with one hand, and pressing with the other upon the small of the back, while at the same time we instructed him to bend his body. His immediate remark was, "O, I feel so strong." On bending without the support of the hand, he felt a very great difference, being utterly unable to control the movement.

The Brace was applied to this case, with directions to take him from his studies, and subject him to a free use of cold water, and much exhilarating play. Before one week expired he was quite restored, and free from pain in his head and back. The fever had also left him, and he was again a bounding, boisterous boy, with a sun-browned face.

The joy of the mother in this case was expressed in tears, and in most ardent efforts to arouse the attention of parents to a sense of the true condition of their delicate children. The truth is, that there are many thousands of children, whose hopes are entirely blasted by neglect of the physical constitution at the most critical stage of its development; for,

“Just as the twig is bent, the tree’s inclined.”

CASE 4.—This was a little boy, three years old, son of Rev. Mr. P. of Boston, Mass., who could not yet stand alone. But, when placed upon his feet, he would actually *run*, though but a very short distance, when he would fall upon his face. After a slight examination, we perceived that he never stood upon his *heels*, but altogether upon his *toes*, so that a line dropped from the crown of his head would fall in front of his toes, instead of passing through the ankle-joint.

We gave it as our opinion, that it was only necessary to push the hollow of the back forward to the true axial line of the body, which passes from the crown of the head through to the ankle-joint, as by so doing, the shoulders would be thrown backward, and the body balanced upon its center. (See. Fig 1.) To prove the correctness of this opinion, the Body-Brace was applied, and in a very short time the little fellow walked like other children.

CASE 5.—This was a little girl, the daughter of Mr. A. of Charleston, S. C. Having almost entirely lost the use of her limbs, she could stand or walk but little at a time. A distinguished physician of that city, familiar with the action of our mechanical appliances in such cases, very courteously directed the parent of the child to our office. A week after the application of the Body-Brace, the child walked with comfort and soon became sound and well.

CASE 6.—Master D. of New Orleans, six years old, had a small hunch on the spine in the hollow of the back, about

the size of a large filbert. It was very tender; so much so, that when we first saw him he could not stand without help. He was so nervous and sensitive that the motion of a carriage threw him into great pain, which sometimes resulted in spasms. He was a fat and beautiful boy, but his retreating hips gave him the appearance of drooping, and made his abdomen very prominent. This boy had undergone all kinds of irritating and counter-irritating treatment, until he abhorred the very name of doctor. His parents, also, had become so disheartened, that they felt constrained to decline the further proposition of their medical adviser, to "put on more caustic." We noticed, particularly, that the more we pushed this boy on each side of the spine, in the hollow of the back, the straighter he stood up; and, also, that when to this experiment we added the lifting of the abdomen at its base, the stronger he became, and the less pain he felt. So much delighted was this little sufferer with the first feeling of the Brace, that although it required some management even to approach him officially, to say nothing about the effect of brandishing a shining appliance before him, we found him most complacently assisting in the final adjustment of the instrument, and saying rather cosily to himself, "my back don't ache so." From the moment of the application of the Brace, this child was free from pain, and could stand alone and walk. In less than ten days, he was running about the city.

CASE 8.—The Rev. Mr. S. of New Orleans, had a little son, between two and three years of age, who seemed to have lost the use of one side of his body, including the leg. He could not sit down without falling on one side. Being unable to obtain relief, he was at length threatened with spinal curvature, when he was brought to our office by his afflicted parents.

With a view to straighten, and strengthen, and bring the body into symmetry—for we did not expect to *cure* the paralysis—the Body-Brace was applied to this case. Im

mediately on its adjustment, the little fellow exhibited the most unequivocal signs of satisfaction and delight. His mother also observed that in carrying him around he sat more erect upon her arm, and hung less upon her neck. In such cases the pressure to the back should only be applied to the side of the spine where a convexity is made by the weight of the body. By that means the spine gradually puts forward again under the body against the axial line to the right or left, as the case may be, and correspondingly diminishes the convexity on the one side and fills up the concavity on the other.

CASE 9.—The following letter from a lady is taken from the columns of the *New York Tribune*:—"Mr. Editor—It is well known that childhood is the period when the foundation is laid for feebleness and bodily distortion. My daughter, now twelve years of age, was feeble, and both unable and indisposed to recreation or labor, and easily prostrated by the slightest exercise. Her body leaned or drooped while sitting or standing, and, after a few years, a deformity of the shoulder and hip made its appearance; a deformity which continued to mock the best appliances of the most eminent physicians, until, at length, having heard much of Dr. Banning's treatment of such cases, I applied to him, when, by the aid of his easy and gentle Body-Brace, the most happy results have ensued. My child is now improved in form and attitude; and her strength and powers of endurance have increased, so that she plays freely, and can walk like other children. My heartfelt gratitude to Providence I give expression to, by this publication, believing that thousands of distorted and enfeebled beings might be remedied and relieved by a timely resort to similar treatment. The great advantage of Dr. B.'s Body-Brace over other appliances which have come under my observation, is, that it acts by *lifting* and *supporting*, and not by compressing the body. A MOTHER, 405 Hudson-st."

We must now conclude this interesting topic. Remember, that if a child is weak you must *support* him, and then you will soon have the pleasure of seeing him *support himself*. If a youth feels habitually weak and languid, put a Brace on him, and soon no Brace will be wanted; but if you neglect to do this, it may soon become *necessary* to wear a Brace *for life*.

Let these cases, and others like them, teach us that *medicine* is not the first thing for the constitutions of children who are dying of physical, moral and mental oppression, and that the danger of omitting to take the above precautions and remedies, in analogous cases, is very great.

MORBID EFFECTS OF RELAXATION IN THE PRODUCTION OF FEMORAL, INGUINAL, AND VENTRAL HERNIA, OR RUPTURES OF THE THIGH, THE GROIN AND THE NAVEL.

ON each side of the lower abdomen are two openings in the abdominal walls, through which pass certain cords, the arrangement being the same in both sexes. These apertures are liable to relaxation or distention, from various causes, the bowel often protruding like a sac, producing a *hernia* or rupture. (See Fig. 27.) Whilst this malady has many degrees of severity, it *always* renders life comfortless, and often proves fatal.

Startling as may be the statement, it is nevertheless true, that about *one-tenth* of the people of this country are the subjects of hernia. Nor can it be doubted that in the present relaxed state of the system, the pressure of the entire visceral mass against the inguinal rings, is abundantly sufficient to account for a very large proportion of the cases of hernia, even though we should fail to estimate in this category a portion of those which result from the sudden descent of the bowels in lifting, coughing, running, and jumping. And, if the encroachment of the internal organs upon the rings distends the same, and thus effects a protrusion, (for how can the passive bowel resist the pres-

Fig. 27.

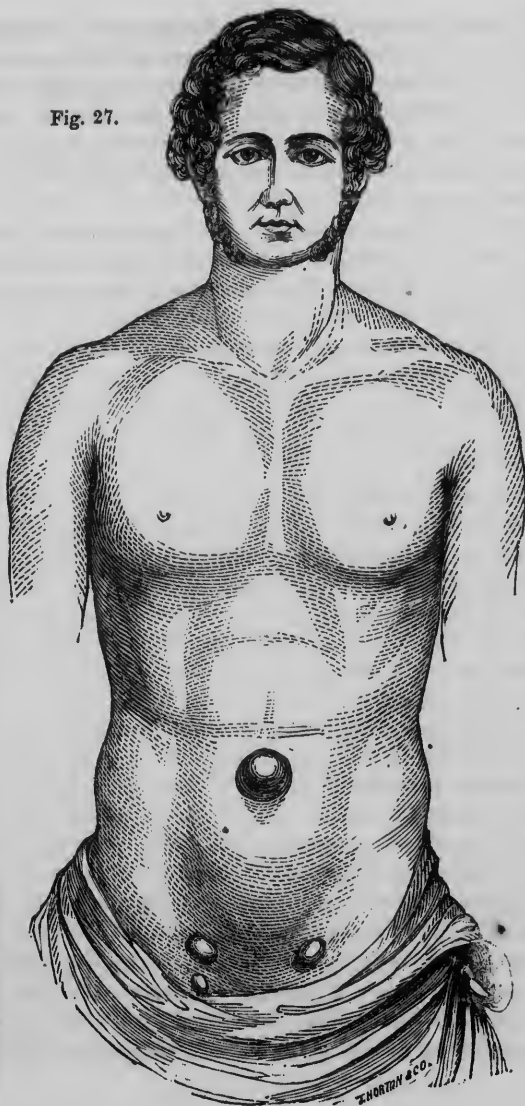


FIG. 27.—Femoral, Inguinal, and Ventral Hernia, or Ruptures of the navel, groins, and thigh.

sure which is forcing it through the aperture?) *the protection of the ring against further encroachment, by the removal of the superincumbent weight*, is certainly the common sense method of curing the rupture. This can only be accomplished by applying support to the abdominal organs. To this end our Instruments are admirably adapted; and if all feeble persons of lax habits, who are troubled with prickling pains and weakness in the lower abdomen, should adopt the precautionary measure of wearing these appliances, many of the most disheartening cases of rupture would be avoided. (See Figs. 28 and 29.)

An accurate and minute account of our *physiological contrivances*, for the relief and cure of the several varieties of *hernia*, will be found in the description of our mechanical devices in another part of this work, to which we would here direct the special attention of the reader.

There are but few contingencies more common and dangerous than ruptures of the bowels; and yet it is a melancholy fact, that none have hitherto met with poorer treatment, most of the trusses being clumsy, and constructed without the least *lifting* power,—the inventors or manufacturers thereof being shamefully ignorant of the laws of anatomy and physiology; or, if well informed respecting the same, having nevertheless strangely neglected to adapt their instruments to the elevation of the abdominal viscera,—the ruinous effect of such neglect being visible in the gradual widening of the breach, and oftentimes in the permanent establishment of the rupture; whereas it would seem to require but a moment's reflection to perceive, that if, when a rupture is caused by visceral weight, it is *plugged* by the application of pads to the inguinal rings, *without supporting at the same time the abdominal viscera*, so as to remove the superincumbent pressure from these rings, (as accomplished by our instrument and illustrated on p. 243, Fig. 29,) the bowel must necessarily protrude whenever the instrument is laid aside, unless, indeed, the patient is

lying down. It therefore appears, that by wearing a truss, which has not, like *ours*, the *upward and backward movement of the abdominal and dorsal muscles*, the patient must either wear the instrument for ever, or lie down for life !

EFFECTS OF THE BODY-BRACE-TRUSS AND RUPTURE AND
TRUSS-BRACE.

CASE 1.—AN eminent surgeon once remarked to us, that if we should ever succeed in producing an instrument to cure femoral hernia, our “Jack would be made,” and then referred us to Miss G., a lady in Pennsylvania, who had been confined to the house for more than five years, by a rupture of this nature. The sac or protrusion was nearly the size of a goose egg. On returning the same, which required considerable pressure, it would again protrude with much force, as soon as the fingers were removed. Every kind of truss had been perseveringly tried, but without the slightest prospect of relief. After some conversation about the probable effect of our own appliance, the *Brace-Truss* was made to hold the rupture. Our highest expectations were more than realized, and the patient went on her way rejoicing. (See Figs. 10 and 29, pages 62 and 234.)

We are not often permitted to use the names of persons restored to health by the application of a Truss. It therefore gives us pleasure to introduce one or two on the present occasion.

CASE 2.—Mr. Joseph C. Ward, of Middletown, Ct., in a letter to us during the past year, writes : “I have been afflicted for nearly thirty years with a double hernia, having used ten or twelve instruments without any permanent benefit. But it is now five months since I tried your invaluable *Brace-Truss*, during all which time I have been entirely free from pain, and enabled to perform much active and laborious duty.”

The following extract from a letter received from Mr.

Fig. 28.

FIG. 28.—Application of Rupture-Truss, by which pads may be applied to the several ruptures on a single subject, all at once.

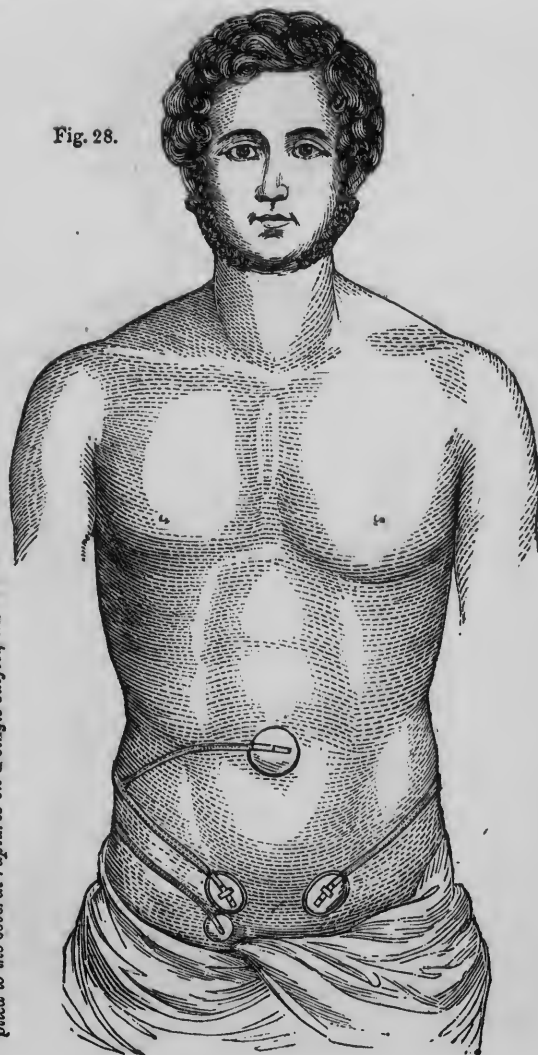
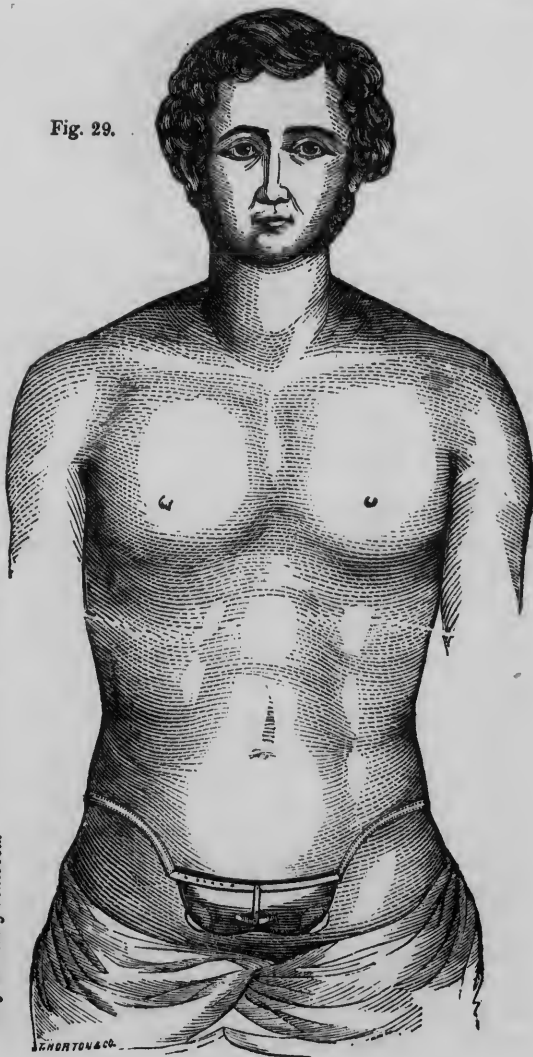


Fig. 29.

FIG. 29.—Brace-Truss applied for cure of inguinal hernia. by which also the spine is supported, and other weaknesses relieved, the hernial openings compressed, and the pressure of the bowels upon the abdominal rings entirely removed.



James Patterson, of the City of New York, in September last, is also submitted as corroborative of the statements made by us, respecting the superiority of our Trusses, over all others hitherto presented to the notice of the public and the profession :—

CASE 3.—“ Having worn for Inguinal hernia, most of the trusses manufactured in Europe and America, I am prepared to say, that all have failed to meet the changes produced in the system by this complaint, such for instance, as weakness in the back, a sinking and swelling of the abdomen in the side affected by the rupture, relaxation of the muscular powers, and a most unpleasant sensation in the morning after a full meal, together with severe mental anxiety, over which one has not the least control. Recently, however, I heard of your Brace-Truss, and, after giving it a fair trial, I hesitate not to say, that no other instrument is so light, comfortable and efficient. I had not worn it long before I discovered, to my great joy, that it was not only retaining the hernia, but also supporting the abdomen and strengthening the back.”

CASE 4.—Mr. Stephen Kingsland, of Middletown, Conn., says :—“ I am a fleshy, laborious man. For many years I have been seriously afflicted with hernia, which has often endangered my life. I have suffered much from operations and trusses, and was about despairing of relief, or of ever feeling like a man again. But recently, and contrary to all expectation, I was not only *perfectly* relieved, by the application of your Rupture-Truss, but derived great pleasure and support from the presence of so light, cool, and beautiful a device. It pains me to think how many are still under the use of bungling trusses.”

CASE 5.—In August last, a gentleman of the medical profession called at our office, and made some inquiry about the *novelty* of our mechanical inventions. He referred more especially to the Rupture-Trusses. In a few days he returned, saying, that he had concluded to *try* one of these

instruments upon a female patient, who had been afflicted with a rupture in the groin for fifteen years. He informed us, that during this time there had been so much money squandered in purchasing mechanical appliances, both in England and America, that her friends were no longer willing to run the risk of losing another dollar. At the same time he remarked, that there was money enough, and a disposition to purchase *relief*, at any cost. The bearing of these words could not be mistaken. An instrument was promptly furnished, with the privilege of "returning it unsoiled," *provided*, that before it was so returned, we should have the opportunity of visiting the patient, free of charge, and, after using our best endeavors to make the Truss effective, *of frankly acknowledging in our own person that the thing was a failure*. This was enough, as well it might be. The doctor accepted the terms, and wended his way towards the home of his desponding patient.

The next day he informed us that the rupture was under control, and the third day brought us tidings of complete success. When the instrument was about to be applied, the patient observed, that *she knew* how to test its value; and, as soon as it was properly adjusted by her physician, she applied her handkerchief to her nose, saying: "There! that is the first successful experiment I have been able to make with my pocket handkerchief for fifteen years!"

MORBID EFFECTS OF RELAXATION IN THE PRODUCTION OF HYSTERIA.

THIS protean malady has defied the profession, if not the whole world, to do more than partially prevent and relieve it, by the use of the ordinary anodyne and anti-spasmodic remedies, and the avoidance of the more obvious circumstances that lead to the recurrence of the paroxysms.

By hysteria, we mean that state of the constitution, where there is an excited or depressed state of the nervous

and all other systems in the human body, predisposing to what are called hysterical paroxysms. Of the constitutional treatment of this disease we have no improvements to suggest, and we only hope to be serviceable in these remarks, by speaking of the malady as *mechanically* induced.

The reader, bearing fully in mind all of the unnatural mechanical stages and bearings that are implied in muscular relaxation, will readily see that a variety of affections called "nervous," may be produced by such a state of things. For instance: The derangements imposed upon the uterus, the spine, bladder, and stomach, through the law of sympathy alone, may excite almost any morbid phenomena of which the nervous system is susceptible, giving them at the same time, the aspect of primary affections. Take, by way of illustration, a singular case which came under our observation some years ago.

A married woman of Pennsylvania, immoderately exerting herself, suddenly became frantic while in the spring house, hurled the vessels of milk out of the door, and jumped into the spring. The doctor, who was called without delay, found her still distracted, yet could think of nothing that might cause such a strange and sudden movement. But, presuming upon the extent of uterine sympathy, he promptly examined the womb. Finding that it had descended a little, he at once replaced it, and in one moment after this, she was calm and perfectly restored!

Then again, the general fallen, dragged, and unsupported state of the internal organs must remove from the nerves distributed to the viscera their wonted support and stimuli of pressure, leaving them in either a torpid or collapsed, or irritable and excited state, or, it may be an alternation of the torpid and irritable condition, there being but a shade of difference between these two states.

The same unmechanical condition of the viscera, may also produce such a stretching of nerve-fiber, as would na-

turally excite an inflamed, tender, and highly exalted sensitiveness, oftentimes producing cramps, spasms, and ungovernable movements, as in St. Vitus's dance, but particularly very acute pain and soreness in the region of the abdomen, imitating primary inflammation of the viscera or peritoneum. But as these imitations or resemblances of primary diseases disappear with the application of the Body-Brace, it requires no further argument to prove that they are but the simple or compound effects of muscular relaxation. Persons predisposed to nervousness or hysteria, are always of the form represented in Figs. 2 and 16, pages 18 and 150, wherein may be seen an entire change of relation in all the truncal organs, from the throat to the pelvis.

USE OF THE BODY-BRACE FOR HYSTERIA.

CASE.—Mrs. B., of Crawford Co., Penn., was the subject of every variety and degree of nervous derangement. Fearful, tremulous, and sympathetic, her mind, though naturally strong, was irritable and capricious. She would experience sudden fits of indisposition to move, with confusion of mind, and of the sense of seeing, hearing, &c. The comfort of herself and family was greatly disturbed by the melancholy condition of her mind. This state of things had lasted for years, and she was daily growing worse, until the application of our long-tried remedial agent, the Body-Brace, which made her a new being both in body and mind. She now enjoys perfect health, and is restored to her former pleasant temper and disposition.

MORBID EFFECTS OF RELAXATION IN THE PRODUCTION OF HYPOCHONDRIA.

THIS terrible disease continues to be most unsuccessfully treated. We shall not attempt to give a definition of the

term, its use being so very indefinite. The word is sometimes employed to express diametrically opposite states of the system. We shall therefore merely specify symptoms, as indications of the treatment to be pursued. These symptoms may be divided into corporeal and mental, those affecting the body, and those that affect the mind. But not withstanding an endless variety of peculiarities and degrees, there are certain general characteristics, that in whole or in part, usually accompany this disease.

The subjects of hypochondria are commonly men who have been actively engaged in life, either as agriculturists, or as commercial or literary men; but they are more seldom found among agriculturists. They generally complain of pain or unusual feelings in some one or more of the organs, the liver being usually pitched upon as the subject of disease. These complaints are not of a violent or organic nature, but are said to be of a functional character. Torpor is the general complaint, or else a tendency to the bilious state. Constipation is usually an attendant; and, oftentimes, the piles, as developed in their varied shades and degrees, occupy a portion of the thoughts and anxieties of the patient. He also becomes retiring in his habits, and seems to take solid comfort in tormenting others about his infirmities. In the midst of wealth and prosperity, the patient begins to conclude that he is, or soon will become, poor. But the most common cause of gloom in the hypochondriac, proceeds from a notion that he has committed some unpardonable and inexplicable crime, for which he ought to die. With reference to his social relations, he strangely concludes that he is justly hated by all, and often conceives the most fantastic notions about his form and his looks. Some imagine that they will soon swell so large as to burst the house. Others imagine themselves to be kings, queens, teapots, and emperors; and we should like to know the name of any domestic animal that has *not* been faithfully represented by these unfortunate invalids. During all this

time they appear to be perfectly rational on every other topic. Instances are not rare among literary men, wherein, notwithstanding these foolish conceptions of a diseased mind, the ordinary business of the pen, though highly responsible, and requiring at times much sober thought, has been conducted with astonishing facility, and with all its accustomed energy and precision. But, be the patient's view of himself what it may, he will invariably look on the dark side of every question, and be most pertinacious in maintaining the positions he may assume.

A remarkable instance of this nature recently occurred in the case of a gentleman, highly distinguished by his talents and attainments, as well as by his private virtues and holy life. In accordance with the ordinary, yet mistaken views of economy in a popular religious establishment, the labor of several offices devolved upon him alone. A hard student withal, and his habits wholly of a sedentary nature, it was utterly impossible that he could escape the morbid effects of muscular relaxation. The day of adversity soon made its appearance. His mind was suddenly disturbed. He became convinced that he had lost his interest in Christ, and was fully satisfied that he could never regain his former position. Argument was used, but all in vain. It was *revealed* to him from on high, and how could he dare to doubt? He did not desire to think otherwise. He believed that God had meted out to him no more than justice had demanded, and he could not bear to question the righteous dealing of his Heavenly Father. He would even endeavor to make the Scriptures bend to this view of the subject; and would so contrive, as to make the argument bear with tremendous force upon his poor, defenseless head,—so much so, indeed, that one could almost be persuaded by his eloquence, that he was absolutely cast off forever! Leave him unmolested on this point, and he would appear quite rational.

The hypochondriac often feels that he is too mean to live,

and that the sight of an honest man would kill him. The victims of this distressing malady are never found sitting or standing erect, with a full chest, and high shoulders. Their stomachs are always retracted and sunken, and their upper belly soft and tender, whilst the lower abdomen is pendulous and hard. They most commonly complain of pain in the right side, and a sense of weight in the stomach, accompanied with tension or stricture; all of which are at once aggravated by the assumption of the erect posture. They walk with their head and shoulders drooped, and the chest compressed; and may be seen at the same time endeavoring to lift the sunken organs within, by placing the hand against the pendulous base of the abdomen.

There can be no doubt that a majority of the cases of hypochondriacal predisposition, are caused and perpetuated by a displacement of the internal organs, by which means the entire system becomes mechanically deranged. This view is rendered plausible by the fact, that such patients always feel greatly supported and relieved, by merely placing one hand upon the small of the back and the other upon the lower abdomen, and gently lifting upward and backward the bowels and other organs. The patient will at once straighten up, breathe freely, and look cheerful. But when the hands are removed, the countenance will suddenly change, and the body will immediately resume its drooping form; a circumstance which not only proves that our view of the origin of these affections is correct, but also shows the power of mechanical support to subjugate diseases of the kind. It also shows that this form of mental aberration is not a primary, or *actual alienation of the mind*; but that it is, in reality, the mere effect of muscular relaxation and consequent compression of the nerves of organic life. Even hypochondriacs themselves almost invariably tell us that they are restrained in their temptation to put an end to their wretched existence, only by a consciousness of

their responsibility to God, thus showing the mind to be in a sane, though sorely depressed condition.

The author is strongly of the opinion, that if his mechanical devices were employed as remedial agents in Lunatic Asylums and Insane Retreats, the mental difficulties of thousands who are now incarcerated therein, would be at once removed, and this by simply restoring the disordered parts of the physical organization. Indeed, we are fully persuaded that our inventions would soon come to be regarded as invaluable and powerful, if not magical auxiliaries in returning the unfortunate inmates to their disconsolate relatives and friends.

Should any one judge these remarks to be too enthusiastic or fanatical, let him call to mind the cases of melancholia and monomania with which he has been acquainted. Let him think of their general appearance, and of their ordinary posture, and their movements. Let him contemplate the extensive and mutual mechanical and geographical displacements which must exist, as well as the functional infringements which must result from deranging the relations of the most sensitive tissues of the body; and then say, whether he who can see no analogy in the cases, is not infinitely more fanatical than he who discerns the relation of cause and effect between the morbid form and diseased mind. Let him also ask himself whether this relation is not something more than an *intimation* that there is enough of pathological connection between the two, to invite the serious attention of thinking minds. But, as we have a few cases in point, that set at defiance all opposing argument, we shall bring them forward, with this additional remark, namely, that, although it may seem incredible that muscular relaxation should be attended with such appalling effects, they are nevertheless but the inevitable result of a deviation from that physical uprightness, which should ever be the distinguishing feature of the human machine.

USE OF THE BODY-BRACE FOR HYPOCHONDRIA.

CASE 1.—A clergyman, of Conn. called upon us for consultation. He stated that for years he had felt a strange desire to kill himself; that his religious and wordly enjoyments were lost; that he was living almost without hope in God; and that he believed himself to be the meanest and vilest of men. He said it would kill him to meet the gaze of an upright man; and that to avoid such a calamity, he had traveled much out of his way, preferring generally the most circuitous and unfrequented paths. He described the horror of his feelings, and compared his perpetual gloom to a mighty press, forcing his soul out of his body. He said he was sometimes in hopes that he was so far insane as to make him irresponsible for his conduct, so that he could have an excuse for gratifying his desire to commit suicide. But he knew that he was perfectly rational and accountable, and could never lose sight of the fact that it was an awful crime. Every pleasant countenance served to deepen his melancholy.

He complained somewhat of dyspepsia. He had also a great appetite. His limbs and back being very weak, his power to walk was greatly diminished; his abdomen was pendulous, round and tender, and his stomach sunken and sore. He could not walk without holding up his abdomen with both hands. His shoulders drooped, and in short he was a perfect case of general displacement. We are aware that we shall startle the reader a little; but as "facts are stubborn things," he must brace himself for the emergency. The application of the Body-Brace at once enabled him to walk or ride with great ease and benefit, and to attend with cheerfulness and satisfaction to the duties of his station. Renewed in body and mind, he used his utmost endeavors to bring our views into notice.

CASE 2.—A gentleman of Connecticut, aged fifty-four,

the most terrible case of hypochondria we have ever witnessed, was quite surprised to find himself in our office; his friends having contrived a successful plan for the accomplishment of this object. He came in bowed forward, his shoulders depressed, chest contracted, stomach retracted and sunken, and his abdomen, which was completely relaxed, hung like a "sack of soft soap" on the bones below. He was continually holding up his abdomen with his hands, or feeling of his stomach. But the great complaint was that he had "the consumption." He had little or no cough, or pain, but complained of continual weakness in the breast, with shortness of breath, stricture, panting, and some palpitation of the heart.

His mind dwelt upon nothing but his approaching dissolution. He was fearful that if he entered a room, he would not come out of it alive; that he would die if he went into the street. He refused for months in succession to change his clothes, or even his linen, alleging as a reason therefor, that he was very much debilitated, and was afraid of sinking under the operation. His friends were almost broken-hearted on account of these things. His lungs and every other organ were sound. He was evidently laboring under the natural effects of a relaxation of the abdominal muscles. We could not prevail upon him to apply the Body-Brace, for, he was afraid that he would "sink under it." He said that his hand would "fit more gently," and that he could graduate the pressure as he was able to bear it.

This case shows the connection between hypochondria and the federal relations of the body. Although the patient fancied that he could not wear the Brace, yet the very fact that he placed his hand upon his abdomen as a *substitute*, with which he might "graduate the pressure," shows conclusively the benefit to be derived, in all such cases, from proper mechanical support to the viscera.

CASE 3.—Capt. S——, of Connecticut, aged sixty, had

been under the treatment of the best medical men in the State. He was naturally of a stout, robust frame, but was now wasted away to a skeleton. He complained of continual pain in his stomach, so constant and severe that his physician pronounced his disease to be a cancer of that organ. He also complained of a severe pain in his right hip, which disabled him from walking. But his mental difficulties were not a few. He was most heavily depressed in mind, roving night and day, like one bereft of reason. His eyes were glassy and vacant, yet showing great anxiety and distress of mind. He could not sit long in one position or stay in any one place, or have his attendants absent a moment. He was in continual fear of death, yet, at the same time, he had a strong inclination to put an end to his life. I examined him in a mechanical point of view, and found him a complete physical wreck. Instead of a tall, plump and manly form, as he had originally been, he was a perfect representation of the drooping posture. (See Figs. 2 and 16.) His stomach was much retracted; his lower belly hard and tumid, resting heavily on the bones below, and pressing severely on the nerves distributed about the hips, thus occasioning the pain and lameness felt in that locality. He was also costive, and troubled somewhat with incontinence of urine.

The Body-Brace was carefully applied. He immediately laughed aloud, for the first time during nine weeks, saying, "that feels comfortable." He gained two pounds and a half in a week from that day. His mind also was clear, and his spirits lively. Soon after this, his unpleasant symptoms entirely disappeared. The doctor who had pronounced in favor of *cancer*, did the author the justice to express his profound astonishment, and spoke of the cure as a signal triumph of mechanical support over the worst form of disease, and with characteristic kindness and courtesy, expressed his readiness to bear testimony to

the value of the Brace. His letter appears in another part of this work.

CASE 4.—Mr. R——, a mechanic, for the last twelve years was greatly indisposed, both in body and mind, being gloomy, desponding, low-spirited and inert. He was troubled with dyspepsia, liver complaint, constipation of the bowels, and, in short, everything that belongs to a combination of hypochondria and dyspepsia. Incapable of attending to his own affairs, a guardian was at length appointed over him. At times he would remain for months in some retired place, overwhelmed with gloom and despondency, saying that he was “damned and lost, and even then experiencing the pangs of hell.” At other times he would become highly excited, and remain so for a very long time, not being contented unless driving business at least sixteen hours in every twenty-four. He would then act as if the world would come to an end if he should cease to rush on headlong. His temptation to destroy himself was constant and dreadful. He would often examine himself to see whether he was insane, and therefore unaccountable for his actions, the invariable result of which was a conviction that he was perfectly rational. He said he spent most of his time in brooding over a “fearful looking for of judgment and fiery indignation.”

This gentleman informed us of the singular fact, that through the whole series of twelve years, a part of which time he was confined in the Hartford Retreat for the Insane, he never neglected his closet devotions, although much of the time it seemed to be but little better than mockery. He was brought to us for consultation. His form was not so much indicative of displacement and relaxation as that spoken of in Case 3; but still it exhibited positive evidences of mechanical derangement, and therefore the Brace was applied. In less than fifteen minutes he said he was better, paid for the instrument, and departed. He soon became calm and cheerful, and was in all

respects like other men. His costive habits ceased immediately, though for years he had never had an alvine evacuation without the aid of cathartics. We have scarcely done justice to this case, and we can only say, that the half has not been told.

A few months after this, in a letter to the author, he writes :—" You will recollect that I had worn your Brace a few days when you left our town, and that I had spoken well of it; and now, sir, I am under very great obligations to you, seeing, that on wearing it a longer time, I am much disappointed, inasmuch as I have had business of the most intricate and perplexing nature to transact ever since you left here; and to my astonishment, I have been able to pursue it with a clear mind, and to go to rest at night, quietly, and without much fatigue. I have done all this also, without the aid of medicine; and I now begin to feel and realize, that after a most distressing illness of more than twelve years, my health is entirely restored."

MORBID EFFECTS OF RELAXATION IN PRODUCING VARICOSE OR ENLARGED VEINS, AND OEDEMA, OR SWELLING OF THE LOWER EXTREMITIES.

* VERY many are the patients who complain of varicose veins. There are also very many causes which induce this malady. Great care should therefore be taken to adapt the remedy to the peculiar nature of the complaint. It is evident that in the case of a general relaxation or of a gravid state of the uterus, the veins must be compressed, and the blood thereby obstructed in its ascent into the trunk, occasioning an engorgement in the veins. We were first led to these reflections, by the case of Mrs. B., who was in her eighth month of pregnancy, and who was exceedingly troubled with varicose veins, which were relieved by the application of the Brace, the instrument having been applied for the relief of other inconveniences.

The lymphatic vessels which convey transparent fluid from the limbs to the trunk are now also compressed, and the swelling of the lower extremities thereby produced, often leads invalids to suppose that they are afflicted with the dropsy ; in consequence of which they frequently undergo severe treatment and great distress of mind, while at the same time the condition of other parts of the body precludes entirely the supposition that they have any such disease. However, as persons afflicted with *Œdema* can have no infallible rule for a guide, they must endeavor to be alive to the facts and philosophy of their case. If there exist a gravid state of the uterus, or tumors of weight, in or on the same ; or if the patient be of the drooping form, and complain of the usual sensations consequent thereon ; there is no indication of dropsy ; but rather a plain intimation that the difficulty is the result of general or local muscular debility ; a *mechanical* difficulty, which we have again and again removed simply by the prompt application of either the Body-Brace or the Pelvic and Child-Bed Girdle.

The nerves of sensation and motion, that pass down the limbs, emanate from the back on each side of the spine, and pass through the pelvis by different apertures. These nerves are exceedingly irritable, and are also very tenacious of their rights. But the relaxation of the abdominal muscles, and the consequent falling of the organs, drive them into new associations, where they become compressed and dragged upon, so that the transmission of the power of sensation and motion which it is their province to effect, is completely cut off ; thus explaining the cause of those pulling, grinding, burning sensations in the loins and limbs, particularly the inner side of the thighs. These pains often extend downward, producing great weakness, numbness, and pricking sensations in the legs and feet. The patient feels comfortable in the morning, but, towards night, is attacked with the most withering pains, accompanied with

cramps, and "a feeling as though the hips would come apart." The reason that persons who complain of these terrible effects of compression, are comparatively free from pain in the morning, is, that the horizontal position of the body during the night, removes, for the time being, the weight from the vessels, and permits the fluid to pass along its way.

USE OF THE BODY-BRACE FOR MILK LEG.

WE have but very little to say respecting this most extraordinary case, and were about disposing of the subject by making an extract from a letter written to us a few days after the application of the Brace. But, as we are permitted to publish the name of the patient, and as this permission so seldom accompanies a *genuine* certificate, we have concluded to publish the whole letter, in the hope that it will be read with interest by all concerned. But before doing this, we would simply remark that the ulcer was caused by abdominal weight upon the vessels nourishing the limbs, the circulation of the blood being thereby obstructed; and, also, that the wonderful change wrought by the Brace, consisted simply in lifting the sunken organs from the compressed arteries and veins, and thus promoting the free circulation of the blood. Let us now have the letter.

"PITTSBURGH, PA.

"TO DR. E. P. BANNING:—Sir—In answer to your inquiry, 'How it has gone with me since I obtained one of your instruments?' allow me to say, that it gives me unfeigned pleasure to inform you that I consider my health entirely restored. And, whilst it is not my desire to appear before the public as a *certifier*, still I cannot refrain from sending you this statement of facts; nor from saying that you are hereby permitted to publish the same in connection with my signature; for, surely it is but meet that

the benefits I have derived from your invaluable Body-Brace, should be extensively known.

"For *twenty-four* years I have been afflicted with *milk leg* ; though at some periods not so severely as at others ; but for that length of time I have been suffering with the same.

"For the last two months, with the exception of seven or eight days, my sufferings have been very severe ; so much so that for days in succession, I could not walk at all, without assistance. Eight or ten days ago, as you are aware, my husband procured for me one of your Braces, which I have been using ever since, and am happy to inform you, that from the second day after I put it on, my leg has assumed a very different appearance, and my health is materially changed for the better. You perceive that I say the *second* day, for I must inform you that the first day I wore the Brace it made me very sick ; so much so that I thought I would have to abandon it, and, indeed, had to take it off. However, as you took the precaution to suggest the probable occurrence of this difficulty, I put it on again the next morning, and since that time I have had no return of that sickening kind of feeling, but, on the contrary, have experienced such pleasant assistance and support, that I would not, for any consideration, part with the Brace. By the blessing of God, I am now walking without limping ; nor do I feel any pain whatever. It is not necessary for me to say to you, though it may be of interest to the public, that the disease had settled or terminated between the knee and ankle, in a running ulcer, accompanied with hardening pain and inflammation. And yet, to the utter astonishment of myself and family, this ulcer, with the use of the Brace alone, is entirely healed, whilst the general appearance of the limb is much more healthy than it has been for a number of years.

"Respectfully, your friend.

"Pittsburgh, Pa.,

"MRS. D. W. MILLER.

"Liberty-street, corner Evans' alley."

**MORBID EFFECTS OF RELAXATION IN PRODUCING OBESITY OR
FATNESS.**

It must be evident to all, that great increase of flesh, or fat, will increase the burden upon the limbs, back, and abdominal walls, the weight or load at the abdomen being as great as that at any other point. Such people are not at all prepared for sudden emotions, in consequence of the jolting of the viscera; a disagreeable sensation of weight being thereby produced in the lower belly, with extreme tenderness at or in the region of the stomach. Neither are they fitted for traveling or journeying, being always greatly fatigued when night approaches, and experiencing at the same time general soreness, as if the parts had been bruised.

In several such cases we have applied the Body-Brace with the most gratifying results.

Persons thus afflicted are for the most part subjects of general muscular laxity, their abdominal viscera being unsupported, and their temperament lymphatic. By this lax state of all the fibers and organs, the absorbent system becomes torpid, the secreting functions of course preponderate over the same, and the result is, an accumulation of soft fat and fluid.

The lifting power of the Brace, together with its general physiological construction and action, cannot fail to restore the normal relations of the parts. The abdominal muscles, instead of being overloaded, are then allowed to take their rest; and the whole trunk becomes stimulated or energized by the genial pressure of the instrument, and the consequent natural and mutual contact of the viscera.

The Body-Brace will also be found a great luxury for all heavy and fleshy persons, however healthy, inasmuch as it diminishes the amount of actual weight upon the spine, and so girds up the loins, that the entire weight is thrown upon

the body's center of gravity, and made to hang from this point, with its proper leverage. Thus impressed, many sportsmen and hunters, and weak travelers, though never complaining of the special difficulties for which the instrument was originally designed, have availed themselves of its beneficial use. It effectually relieves the constant pressure upon the pelvis, and also prevents that soreness of the stomach and sides, which is so often the result of undue stretching of the mooring ligaments. Our own personal experience enables us to say, that the usual effects of jolting are never experienced by any person wearing the Body-Brace, or *Traveling Companion*, as it is sometimes not inaptly denominated by those who have enjoyed the comforts and conveniences of its supporting, if not propelling power.

USE OF THE BODY-BRACE FOR OBESITY OR FATNESS.

CASE 1.—Mrs. N., of Charleston, S. C., was naturally of a small frame; but when she called to confer with us respecting the views we had publicly advanced, she had grown so large and corpulent, that her flesh literally trembled with the slightest movement of her body. It was only with great difficulty that she could walk from house to house, being almost sweltered by the load of fat in which her once delicate form had become so distressingly enclosed. The least physical exercise would take away her breath. It was therefore next to impossible for her to ascend a flight of stairs.

We had very little difficulty in persuading this lady to apply the Body-Brace. She saw the reasonableness of the whole affair, and determined at once to try the experiment. The relief afforded was *immediate*, and, in the space of two months, her husband and acquaintances were greatly surprised at her improved looks, as well as at the fact that her comfortable feelings and fair proportions were entirely restored.

CASE 2.—Another case of this nature occurred more recently. It was that of a lady who had once been remarkable for her well-proportioned and beautiful form. But her flesh began to increase ; and, so fearfully did it accumulate, that its immense weight made her a burden to herself. The arteries and veins of the lower limbs had become so much compressed as to materially obstruct the circulation of the blood, the result of which was an obstinate lameness, that confined her to either her chair or bed for months at a time.

In less than a week after the Body-Brace was applied to this lady, her flesh was so much reduced, that the instrument had to be exchanged for one of smaller size. In about six weeks her lameness had entirely disappeared, and her form presented its original size and shape.

MORBID EFFECTS OF RELAXATION IN THE PRODUCTION OF HABITUAL COLIC.

HABITUAL COLIC is another painful affection, resulting from a relaxed condition of the muscular system. Persons thus afflicted are usually of the form of Fig. 2. The general relaxation being complete, and the legitimate consequences thereof, such, for instance, as displacements, derangements, infringements, dragging, weight, &c., being therefore permanently established, every effort which shakes the body, and taxes the tone of the abdominal and dorsal muscles, will, in certain temperaments, produce paroxysms of colic. These paroxysms, the frequency of which gives rise to a neuralgia, or extreme sensitiveness of the visceral tissues, may be prevented and relieved by applying proper support to the abdomen and spine. And, as they are caused and perpetuated, or made habitual by a relaxed condition of the abdominal and dorsal muscles, and the consequent tumid and pendent state of the abdomen, it will not be difficult to imagine how it is that the Body.

Brace, which imitates the action of the tense and healthy muscles, is so successful in the removal of the malady.

USE OF THE BRACE FOR HABITUAL COLIC.

CASE 1.—A MEDICAL gentleman of Pa. was subject to the most severe and obstinate attacks of colic. These attacks would often last for several days at a time. Between the paroxysms he was so feeble that he could walk about only with great difficulty. His shoulders were greatly curved, his head bowed down, waist slim, abdomen tender and oftentimes very tumid, his voice feeble, and his bowels sluggish. Riding on horseback was also more or less painful, a paroxysm of colic being frequently produced by the jolting of the occasion. Having heard at one of our lectures some "extravagant remarks" about the value of the Brace as a Traveling Companion, especially for riding on horseback and removing habitual colic, and, choosing a season when he had much exercise to perform, he determined to put the instrument to the test.

In the evening of the third day, he called on us, and remarked, as might be supposed, in a tone of the highest gratification and surprise, "Doctor, I am a new man! With the use of your Brace, I can ride all day with ease and pleasure; and I now feel greatly invigorated, notwithstanding an increased amount of exercise. My colic pains are subdued, and the dragging at my stomach is also entirely removed. I can, moreover, stand erect, and am beginning to fancy that I belong to the human race."

CASE 2.—Another person of the same place, who was habitually afflicted with this disease, so that he could not endure riding or other jolting, a return of the paroxysms being invariably the result of such exercise, also applied the Brace, and, in less than two days, he expressed the opinion, that "no invalid should think of walking or riding without the aid of this magical invention."

USE OF THE BODY-BRACE, OR TRAVELING COMPANION, FOR SEA-SICKNESS, AND THE NAUSEA PRODUCED IN TRAVELING BY LAND.

"*I would give the world, if I could travel, either by land or water, and not be so dreadful sick,*" is a very common expression. But men do not always mean what they say; nor is it every one that has so much to give for that which he earnestly desires. In any event, *we* shall not be disappointed; for, although we may justly lay claim to the largeness of the offer, by producing the means to ward off stage and sea-sickness, yet not having entered the list of competitors for the prize, our expectations reach no farther than the price of the instrument. But let us inquire what it is that causes and perpetuates the sickness under consideration.

It is seldom that persons are very sick, when the stage runs steadily, or the boat glides smoothly along; but it is when the road is very rough, and the coach-body swings about, and is suddenly and often rocked up and down; it is when the sea is boisterous, and its surface broken; when its waves oppose themselves to the gliding motion of the ship, incessantly tossing her about, that the strongest and most insensible stomach begins to partake of the agitation, and to move from side to side, but more particularly up and down. And, when the wave falls and lets down the ship, so that you feel that you are sinking, the stomach and bowels, through the action of the sympathetic nerve, become conscious of the fact, and resist the sinking by a general sense of rising, as if they would leap out of the body; and, so much of a *reality* is this feeling, that the mouth is irresistibly opened for their exit.

There is, therefore, no longer any doubt, that these sickening sensations are the result of an actual traversing of the stomach and bowels up and down the truncal cavity,—

to borrow an illustration, somewhat as if a few eggs placed in the bottom of a large basket, were rolling and rattling around for want either of more to fill up the basket, or of a smaller basket to keep them closer together. Such being the case, it is no wonder that the tenacious nervous system should become unbalanced, and the equilibrium of the stomach and bowels destroyed.

In support of the foregoing remarks, we might mention the fact, that all experienced travelers by water say, that the center of the ship, where there is least motion, is the best situation for a sea-sick person. This is owing to the fact, that the viscera and nervous system are thus less exposed to commotion than in any other part of the ship; and it is well known that to lie down, with the hips higher than any other part of the body, will somewhat relieve the sensation of *rising* in the stomach.

It is also an established fact, that sailors always find that a handkerchief tied tightly around the abdomen, low down, preserves them from sickness in a violent storm. Indeed, we have frequently had occasion, ourselves, to put this expedient in practice; as, for instance, in crossing the Sound from Charleston to Wilmington, when we were so violently sick as to be compelled to lie down; and, when in this horizontal position, we instinctively crossed our arms over the lower abdomen, and drew the abdominal contents upwards, and derived very great comfort therefrom, so long, at least, as we continued *lifting* with our hands the stomach and bowels,—the resumption of the erect posture being uniformly attended with a return of nausea and vomiting.

Now, it must be plain, from what has been said, that whatever binds up or packs away the abdominal organs in an immovable condition, and, at the same time, gives to them an upward and backward tendency or bearing, is certain either to prevent or mitigate that awful, death-like, and altogether indescribable nausea, which so effectually destroys the happiness of invalids and others traveling by land or water.

We therefore submit for consideration and use, the Body-Brace or Traveling Companion, the coincidence between the indication of cure and the action of this instrument, being of the most remarkable character. The reader will not be surprised at this ; for how could we do less, seeing that the nausea of sea-sickness, as well as that produced by traveling over rough roads, is caused and perpetuated by an actual moving condition of the stomach and bowels, and may be pretty certainly prevented or relieved by that support which most effectually binds up the abdomen, and intercepts all motion of the internal organs.

Since the foregoing was written, Mr. E. B. Lyman, of Mobile, Ala., called upon us to say, that we were at liberty to publish his name in connection with the facts he had communicated respecting his use of the Body-Brace for sea-sickness. This we cannot better do, than by the publication of the following extract :—

CASE.—“DR. E. P. BANNING :—Dear Sir,—Having conversed with you respecting the virtues of the Body-Brace in preventing sea-sickness ; and having lately had a good opportunity to prove the correctness of your views, by making a trial of this remarkable invention, I am happy to inform you that the result of the experiment astonished me beyond measure ; for, notwithstanding that in my frequent travels by water, I have *always* been subjected to the most distressing and death-like sensations in the stomach and bowels, I am now able to say, that, on the occasion of the experiment above referred to, *I could not get sea-sick*, your Body-Brace having placed me entirely beyond the nauseating influences of the deep, even in the most boisterous weather. And, I should not think that I was doing you justice, even to hint, that, by *possibility*, the power to remain on the water, without being sea-sick, was not *altogether* attributable to my constant use of the Body-Brace, or *Traveling Companion*, as it has also been happily termed. Neither is it doing the Brace full justice, simply

to say, that I could not get sea-sick under its influence ; for, by its use I was enabled to eat and drink freely everything I desired, as well as to smoke a few good segars, things which, while at sea, I had never before been able to do."

USE OF THE BODY-BRACE FOR SEMINAL WEAKNESS.

THIS malady is sometimes caused by constitutional debility ; or by simple weakness of the loins ; or, it may be caused by spinal irritation ; but, it is commonly the result of a well known destructive habit, which, in almost every instance, has been contracted in childhood by association with wild and vicious youths.

Constipation and dyspepsia, languor and lassitude, and a cowardly indisposition to labor, are among the direful effects of this painful weakness. The back also partakes largely of the difficulty ; but the brain suffers more than any other locality. The memory becomes impaired, the ideas confused, and the mind incapable of, and indisposed to, any effort, other than that of preying upon itself. The head aches much, particularly on attempting any mental effort ; and the patient is timorous, shy, recluse, and often morose. He hesitates when he speaks, is fearful and cowardly, loses his interest in surrounding objects, feels guilty and degraded ; grows restless ; his eyes become glassy and wild ; and, sooner or later, he gives signs of mental aberration, which often increase, until, worn out with phantoms and mental horrors, he terminates his life by violence, no one ever imagining the real cause of his sufferings and death. This malady also produces a debilitated state of the loins, whereby the hope of offspring is either entirely cut off, or realized in a puny and imbecile issue.

We have often been consulted by individuals, whose health had been so much impaired in early life by this dreadful disease, that the most diligent care in after life

could not restore it, their nervous systems having become hopelessly deranged.

We intend simply to speak of the *mechanical* treatment of this malady; and, we are fully prepared to illustrate the effects of the Body-Brace in mitigating, and in many cases, entirely eradicating the evil; but, the great delicacy of the subject renders it improper to detail cases; therefore, we must content ourselves by assuring the reader, that the Brace has been found to exert a salutary influence upon both the wasting and weakening excess, as well as upon the physical and mental sufferings of the subject.

If we are asked, how can the Brace affect such a weakness? we answer, that it does this by the most simple and rational means; for, inasmuch as this malady is almost always accompanied by more or less general muscular debility, inducing great loss of nervous tone, and an undue compression of the nerves, arteries and veins, which, connected with the generative organs, nourish, warm, stimulate, and give tone and energy to them, the Brace, by supporting the abdomen and elevating those sunken parts, relieves these organs of such compression, allows a free, nervous, arterial, venous and lymphatic circulation, and consequently effects a restoration of the energies of the suffering parts.

Again, we have the uniform testimony of patients, that the pressure of the hard and cool front pad of the Brace, acts as a stimulant, either by contact or by sympathy, producing, oftentimes, in the space of one hour, a sense of warmth and feeling, to which the patient had long been a stranger.

The Brace also frequently relieves the whole class of symptoms, consequent upon that general relaxation of the system which is always attendant upon this malady. By its use also, many of the most awful cases of mental and physical dilapidation, resulting from the evil in question, have been improved and rebuilt, so that now they stand

forth as living witnesses of the efficacy of judicious mechanical support.

USE OF THE BODY-BRACE FOR MISCELLANEOUS AFFECTIONS.

THESE cases will be read with profit, inasmuch as they cannot fail to inspire additional confidence in the use of the Brace.

Letter from Commodore Jones.

DR. E. P. BANNING—Dear Sir: Ever since the year 1814, when I received a severe gun-shot wound by a musket ball, which still remains in the body, I have suffered much from what is commonly termed a weak back, and pain in the back, etc., etc., so much so, as at times to destroy all comfort, unless supported by an arm-chair or the like—consequently riding on horseback, or remaining long on the feet, was productive of much pain. I tried various Belts, Russian and others, all of which I found to be worse than the disease. Finally, I determined to make one more effort in search of relief, and, as you recollect, called at your office, in New York, and had one of your Braces adjusted to my body, *on trial*, for a few days. Suffice it to say, that at the end of three days I called and paid for the Brace, which I have worn ever since, *except an interval of two days*, after my return home, when I laid it aside with a view to ascertain whether the relief experienced was real or imaginary.

Since wearing your Body-Brace, I have been subjected to some severe and long exposure, without rest. On one occasion I left my breakfast table at half-past 8 o'clock, rode seven or eight miles, alighted, and *remained on my feet*, walking but little until dark, rode back to Washington just in time to meet an evening's engagement, where I remained till 11 o'clock, *without sitting down at all*, except

when riding, from half-past 8 A. M., till half-past 11 P. M., and this without the slightest inconvenience at the time or subsequently. Had it not been for the Brace, I could not have endured half the fatigue without great inconvenience and pain at the time, as well as feeling the effects for several days afterward.

Before I put on your Brace, I was in the habitual use of the Friction Brush, which I thought of great service to me, and, for several years I supposed that I could not live without it. But now I have laid it aside, having had no recurrence of the symptoms which induced its use since I wore the Brace. And, I feel warranted in saying, that not only has my ability to endure fatigue been greatly renovated by your Brace, but that my general health has also improved under its use. Wishing you a successful tour in your *pilgrimage* for the relief of the afflicted, I am yours, gratefully,

THOMAS APC. JONES, *U. S. Navy.*

Letter from Mrs. Moore, of Barnwell, S. C.

DR. E. P. BANNING—Dear Sir: Although I had not been able to walk for four years, and for half that time could not stand upon my feet, I am now able, with the assistance of a cane, to walk about the house. The cane, however, is frequently dispensed with, and I hope before long to give it up entirely. This improvement in my health, which is going on all the time, is the result of wearing your invaluable Body-Brace, the benefit of which is so decided, that no one, I think, who is afflicted with any chronic affection which it is calculated to relieve, could be induced to leave it off until they are entirely well.

CHARLOTTE MOORE.

A colored man, in Mobile, Ala., who modestly requested us not to publish his name, recently sent us the following letter. We give it *verbatim*:—

DR. BANNING—Sir : Some three years ago I came to this metropolis, afflicted with a complication of complaints, so that I had for four years to use both a crutch and a cane, and sometimes then could scarcely go along at that. Ultimately my disease began to threaten my dissolution. About that time, as good hap was, I saw your advertisement, and, in reviewing it (for I done it with great delight), I perceived, sir, that you had entered into all the minutæ of my complaints, and described my feelings much better than I could have done ; therefore, without further delay, I made application to your legal agent, and procured one of your Braces ; and, strange to tell, in less than six hours, I laid aside my crutch and cane, and have not had occasion to use them since. And now, sir, though I am one of the sons of Ham, yet, sir, you need not doubt in the least the veracity of my assertions, for there are in this city many witnesses of the whole facts, just as they stood. Now, sir, should these few imperfect lines meet your approbation, I shall be highly gratified, and remain your humble servant,

A. G.

Certificate from Ladies of Boston, Mass.

THE undersigned take pleasure in certifying that Dr. Banning's Body-Brace, has been immediately and incomparably more efficient for the relief of female weaknesses, than any other instrument in use ; and it is hereby recommended to the confidence of those requiring support. We have found it perfectly comfortable in its bearing on the body

MRS. NEWCOMB,
 " TUCKER,
 " PERKINS,

MRS. FRENCH,
 " BRAMHALL,
 " PORTER.

Letter from Edmund B. Doane, of North Argyle, Washington County, N. Y.

DR. E. P. BANNING—Dear Sir: Mrs. Doane was confined to her bed for eleven years. She could not lie even in a horizontal position, but lay all this time with her head the lowest. She could not help herself at all, but had to be turned in bed by her attendants. She could not bear even the jarring of the bed. Her abdomen was nothing but perfect laxity, without any action, and if she attempted to sit, the dragging sensation was so great that she would faint almost immediately. During the most of this time she was untiring in her applications to the best medical practitioners, but to no good purpose. She has also tried several kinds of mechanical supporters, designed to help in such cases, but nothing was of any avail. Finally, she gave up, discouraged, thinking to spend the rest of her days in bed. But a friend called on her about three years ago, and showed her a book, entitled "Banning's Common Sense on Chronic Diseases," containing a description of your Body-Brace, which she thought was better than anything else of the kind. She was therefore induced to make one more trial. The result has been, to her great joy, that for the last two years she has been able to go about her house, and superintend her business. She is also able to ride about town and call upon her old friends. She is now quite comfortable, and attributes all her improvement in health to the *good effects of your Brace*.

EDMUND B. DOANE.

Letter from Mr. Asahel S. Kidder, of Warren, Pa.

DR. E. P. BANNING:—Dear Sir—I gave you an account of the success attending the application of your Brace in the case of my wife, about a year since. She has now

wore it constantly about two years, and I am happy to say that my hopes and expectations have been more than realized. For eight or ten years she was afflicted with a "bearing down," as it is commonly called, and in fact was unable to do any thing, being perfectly disconsolate and unhappy. Every remedy that I could hear of was resorted to, and many eminent physicians were consulted, but without relief. In the mean time, her whole nervous system was constantly excited with frequent paroxysms of hysteria, in its most painful form. Although confined to her room most of the time during many years of affliction, yet for five or six months she was actually in bed. All hope of relief was abandoned, and the doctors, among whom were my father, Dr. N. L. Kidder, Dr. Andrew Oliver, Dr. B. Wisner, of Penn Yan, N. Y., and others in this vicinity, with Dr. Parker, my family physician,—all were discouraged, and frankly told me that her case did not seem to be within the reach of medicine.

Having heard of your success in this region, and been advised by Dr. Parker, with whom you are acquainted, she consented to the application of the Brace. From that moment she was relieved, and her health began to improve with the most astonishing rapidity. Her strength returned; her difficulties were removed, and in a very short time she was able to attend to her family and domestic affairs, and visit her friends at a distance.

ASAHEL S. KIDDER.

Extract from a Letter written by a Lady, to her Brother, a Physician.

"DEAR BROTHER: * * * After trying various other supporters to no avail, I was induced, by a friend, to try one of Dr. Banning's Body-Braces. I have worn it some time, and can testify that language is inadequate to express the relief I have received from it. That constant dull pain in the right side is wholly removed by its use; likewise the

pressing and bearing down of the abdomen : the piles and constipation of the bowels are also relieved. You well know how difficult it has been for me for years to walk any distance ; but since I have worn the Brace I have walked miles daily with but little inconvenience. I could not believe any thing could have been devised that would so perfectly support the body. And now, my dear brother, I want you to recommend this most useful instrument to all your patients afflicted as I have been.

“ M. K. EVERET, *New York.*”

Certificate of Mr. Tanner, of Warren, Pa.

This gentleman has kindly furnished us with the following statement, which we should be unwilling to overlook, had it no other merit than its refreshing brevity. It will be perused with satisfaction by a large circle of friends.

“ For twenty-five years I was sorely afflicted with obstinate costiveness, piles, terrible sick headache, and melancholy, to such an extent, that about one third of my time I was unfit for corporeal or mental labor. By the use of Dr. Banning's Body-Brace I was soon perfectly relieved of them all. Two years have now elapsed, and no return of my former troubles. I have also seen hundreds of cases equally relieved by the same means. I believe it will be *invaluable*, at least to all who are similarly afflicted.

“ ARCHIBALD TANNER.”

Miss Mary L., of Nashville, Tennessee, was brought to our office, in the following condition :—

Her right leg was so much shortened as to be unable to touch the floor with the end of the toe. She was obliged to use a crutch with notches cut at such height as would receive the pressure of the foot. On the same week of the application of the Body-Brace, the limb lengthened

half an inch; and, within two months, it was so much improved that the crutch was dispensed with.

Extract of a Letter from the Rev. G. B. Eastman, of Brownville, Jefferson County.

"I am a great deal better than I was last spring, and this improvement is obviously attributable to the Brace. It has done all you promised; more, indeed, than I dared expect. I have performed my services, and preached with a comfort and ease which I had not known before for years. Instead of getting worse, as I was when I saw you, I have been getting better. It has also in a great measure overcome the difficulty of respiration, excepting that which results from a catarrhal affection, and it is of vast service even in this, *by giving me power to force away obstructions.* It has relieved my habitual constipation. It has done the work of any quantity of blue pill, and much more effectually. It has also relieved the 'fluttering' or 'palpitation of the heart,' which so much troubled me in public speaking. In a word, it *has* kept, and I trust *will* keep me from *breaking down.* You may, therefore, set me down as a convert to Banningism and 'Common Sense.' I beg you will excuse me deferring so long to write to you. I was hoping I should be able to say I was in all respects *well.* I owe you a great debt of gratitude for the benefit I have derived from your Brace. It is, I am fully satisfied, the thing for *broken down* clergymen, and I shall, as far as I may be able, direct attention to it.

"Believe me to be, most gratefully, yours,

"G. B. EASTMAN."

Letter from Mr. William Wilkinson, of Pittsburgh, Pa.

TO DR. E. P. BANNING:—Dear Sir—Being sensible no less of a debt of gratitude to you than of a duty to the afflicted, I bear cheerful testimony to the benefits I have derived from the use of your invaluable Body-Brace, and

I regret my inability to make my statement express all that I feel. For nearly ten years I have been in that state which would be called delicate health. In the fall of 1843, I was attacked with the then prevailing epidemic influenza, in its most violent form, from which my recovery was both doubtful and tedious. It left my health much impaired and my constitution so shattered, that my friends have been astonished to find me alive. My system being thus prepared by disease, the seeds which had been lurking in me soon began to develop themselves in liver complaint, disease of the kidneys, dyspepsia, constipation, an entire derangement of the digestive organs, a burning sensation in the stomach after eating, and, when the bowels were empty, a sinking, gnawing sensation at the pit of the stomach, which, at times, was of the most excruciating nature; pain in the side and back, pain and tightness in the breast, right shoulder, and top of the right lung; a dull, heavy pain in my head, causing drowsiness, which prevented me from sitting quiet for any length of time without falling asleep. I had quick, shooting pains all through my frame; a short, quick, tickling cough, which so constantly kept my bronchial tubes inflamed, and my vocal organs so weak and sore, that, at times, my speech was almost inaudible.

But great as was my physical prostration and general debility, the depression of spirits and feelings of melancholy which I endured, far exceeded them. From the pain in my breast, flush in my face, and burning in my hands, I would conclude I was far advanced in consumption; and, from the pain and gnawing in my stomach, I would conclude my misery was caused by worms. Thus I went through the whole catalogue of diseases and remedies. I could fix my mind on no subject or object for any length of time; could not read any substantial book with pleasure; nay, I could not, at times, even fix my mind on the promises and comforts of religion. To a constitutional feeling of cheerfulness, and religion, I owe it that life did not become an

absolute burden. At length, losing confidence in my physicians and their prescriptions, I flew to 'Tonics,' 'Balsams,' 'Plasters,' 'Ointments,' 'Pills,' and 'Syrups,' until nearly the whole catalogue of patent Pharmacy had been tried without having received any lasting or sensible good, or even having the hope that I was ever to be benefited by any thing whatever.

The foregoing is but a faint effort to describe my condition of body and mind, when I attended the lecture you delivered in this place, and which resulted in the trial of your Brace; an instrument which has made me feel like a new man. It has begotten hope and confidence, and I am satisfied that it is the cheapest, the most pleasant, and the most effectual remedy for diseases of a chronic nature. I have not felt the slightest pain or soreness in my liver or kidneys since I have been wearing the Brace; nor has the pain and weakness in my back given me any trouble; and notwithstanding, the evening after I put it on, I stood upon my feet in a dense crowd for three hours, it caused me no inconvenience, (a thing which I could not have done without the help of the Brace.) The pain in my head, breast and lungs has been entirely forgotten. I have no cough, and my throat and voice are improving astonishingly. I had, before using the Brace, been in the habit of taking medicine, as a remedy for constipation, from which I received great relief; indeed, I could not be without it one day without suffering. But I have not had one meal of it since; nor do I feel any necessity for it, as my evacuations are regular and natural. The muscular pains that caused me so much trouble are rapidly following their attendant ills. But it is in my *mind* that I feel the greatest change. I have regained an elasticity and buoyancy of spirits, to which I have been long a stranger. I am not constantly brooding over my disease; indeed, I almost think I had deceived myself, that *I was not sick*. But my improved state does not depend upon my own conceit; my friends

see the change. Even those who know nothing of the appliance I have been using, have flattered me upon my improved appearance, declaring that I am actually growing fleshy and fat, the truth of which will be found in the fact that I have gained several pounds since I first applied the Bracc. I conclude by declaring it as my opinion, for the seriousness of which I expect to answer at the great day of account, that there is *no* case, however severe, of physical prostration, of general or nervous debility, or weakness of the muscular, digestive, pulmonary, or vocal organs, which is not of a constitutional character, that will not be greatly relieved, if not radically cured, by the use of your Brace, and those exercises you recommend to accompany its use.

Wishing you continued success,

I am, sir, yours, &c.,

WILLIAM WILKINSON.

Extract of a Letter from the Rev. Isaac Sherwood, of Cold Spring Harbor, L. I.

Previous to wearing your Brace, I had, among other afflictions, been a victim to virulent piles and obstinate constipation. I had not enjoyed any peristaltic movements of the bowels for several years, without the daily use of aperient medicine, my general health suffering in consequence, as might be expected. Since wearing your Brace, I have enjoyed all the health and comfort that can result from a regular habit of body, without the aid of any aperient medicine. But I am still a sufferer from my other affliction. My conviction, however, of the correctness of its principles of action, and also of its efficient results in numerous cases, remain unchanged.

“Respectfully yours,

“ISAAC SHERWOOD, Rector, &c.”

REMARKS ON TIGHT LACING.

ALTHOUGH we have said much already in our lecture on dress, concerning the evils of this insane practice, we have concluded to add a few words, under this separate head, in a more familiar style, in the humble expectation, that by so doing, we shall materially increase the chances in favor of reform.

It is a curious fact, that notwithstanding the universality of the practice of tight lacing, and the ready admission of its deleterious effects upon the system, no lady has ever been known to make a *personal* application of the warnings in relation thereto. The charge is almost invariably met with a flat denial. And yet, strange to relate, we have frequently known ladies, who, in conversation with others, would expatiate most feelingly upon the deleterious effects of compressing the waist, when, at the same time, it was obvious enough, that they were themselves suffering from this very cause, and when indeed, nothing but a desire to part with one of our fingers, could have induced us to place it beneath their corset strings. But how is all this to be explained? The practice of tight lacing is as notorious as the denial of the charge. Let us endeavor to account for the same.

The truth is, *you do lace tightly*; and when we say that we frankly admit the honesty of your protestations, it is simply because we *know* that you are deceiving yourselves by the supposition that you can do no harm by simply increasing the pressure, so as to meet the gradual diminution in the size of the waist. You should remember, however, that whilst you are doing this, your ribs and lungs are also quietly yielding to the surrounding pressure; that your unconsciousness of this derangement of the mechanical relations of these organs is attributable to the fact that their sensibilities are benumbed, the pressure having become to

them a second nature ; and that sooner or later, the time will come when the *functional* derangement thereby induced will compel you to pause, and look upon yourselves, as blind victims of fashion and folly.

It would seem that the love of ease and comfort implanted in the human heart, would prevent so many from laying the foundation for a life of sorrow and an early grave. Such, however, is not the fact. Wherever we turn our eyes, we find evidence to the contrary. Even after being well-informed of the tendencies of this ruinous practice, they disregard the warning, and continue in their mad career. Instead of ascertaining what amount of pressure can be used without increasing the natural labor of the muscles in elevating the ribs in inspiration, diminishing the size of the waist, and compressing the lungs, they recklessly set about inquiring how much they can *endure*. They even appear sorry to learn that *the first ounce of pressure on the ribs is an encroachment on the pulmonary apparatus*. Perhaps, it has been well said, that "there is no hope of reformation, till the folly-smitten girls learn, that, to distort the form by lacing, is at once *criminal, dishonorable, and in very bad taste*."

The record of child-bed misfortunes show that three out of four of the cases of bad labor and death of either or both the child and mother, have been the inheritance of the unfortunate girl, whose form was made respectable by artificial means ; for Providence seems to make a decided difference between forms of naturally small size and those which are made so by artificial means. It often happens, therefore, that the smallest person, in whom every part is faithful and full of vigor, will succeed very well in bearing and bringing forth children ; where a larger one, who has confined the ribs and compressed the muscles, will meet with great difficulty. The fault in general, is in the action of the soft, rather than in the form of the hard, parts.

It is natural and right to hope for offspring, but when

the growing *fœtus* demands room, and travels upward for it, what does it find? Why, that artificial compression has placed bones in the way of its free progress. These bones separate tardily and imperfectly, causing an over expansion at the lower abdomen, with great pressure and a painful crowding and distending at the unyielding waist, producing thereby an improper compression of the womb. The undue distension of the muscles will produce great discomfort. The nerves will also be dragged upon and compressed; the abdominal organs will suffer for want of room; the circulation in both the large and small vessels will be mechanically impeded and obstructed, producing engorgement and congestion, with great restlessness, a general disturbance of the brain, and confusion of mind.

No intelligent person can fail to see that these effects will operate disastrously on the susceptibilities of the body, and aggravate the common troubles of pregnancy. Much medicine will therefore be requisite, but especially will bleeding become necessary to avert threatening danger and relieve present troubles, and that, too, when there is no blood to spare. And oh! how often is it, that long before the period of her delivery, the poor sufferer is made to feel that death would be but a sweet release from weary nights, an aching heart, and dreadful gloom of mind!

Now, let us suppose that the proper period has arrived, when all the natural and artificial efforts are to be made, and that the patient is fully to realize her highest hopes, or be disappointed by the loss of her child. How does she look upon the world and its fashions, its arbitrary customs, and the respectable form? Would she not exchange then: all for a safe delivery, or even for a mitigation of some of her pangs? And will she not reproach herself and pray for forgiveness and relief from the consequences of her folly?

The birth, if natural, is effected by the contraction of the womb and abdominal muscles. But these muscles have

been habitually compressed, shut in, and forbidden that liberty of motion which they should enjoy; consequently their great design is frustrated. They are now thin, torpid, feeble, and unused to action. The womb, also, has been compressed; and there is likewise a sympathy between the muscular fibers of both it and the abdomen; so that now, when they are called on to act in concert with a regular, steady, firm force, they will not do it; they lack the power; therefore, their efforts will be false, lingering, inefficient and wearying, acute and full of pain, teasing the patient, and in no way effective. The time will be tedious, and the patient worn out and completely discouraged.

Too often these efforts terminate in the death of the offspring; yet, generally speaking, both mother and child are saved, though it be "*as by fire*." It is not uncommon, however, for the patient to sink in the struggle, even at the moment of delivery, being worn down by pain, morbid efforts and manipulations; or else to linger a few hours or days in child-bed, under fever, inflammation, or disorganization, and then—*die*; thus closing the drama, and furnishing an able synopsis of the history of **A MOST RESPECTABLE FORM**.

We cannot dismiss this interesting subject without some allusion to the responsibility of our own sex, for the existence of the dreadful habit of *tight-lacing*. This could not be more effectually done, than by introducing the colloquial strictures of an accomplished lady, who had been listening with great attention to one of our lectures on female attire. We had been speaking of the criminality of *mothers* in *encouraging*, if not *preparing* their daughters for a *respectable* and advantageous entrance into society. As soon as we had concluded, she stepped forth, and said: "Doctor, I like your remarks on the iniquity and folly of our sex. They are not at all too severe. I myself plead guilty also. But after all, I do not think that you have done the subject *full* justice. In other words, you have not fully discharged

your duty. I do not deny that my anger is always aroused at the anathemas of men on this point, for I well know that though the guilt and practice is with us, the fault and cause is almost *entirely* with your own sex. Bitter experience has demonstrated this to me, and I think I can convince you that I am not mistaken :—

When young and ruddy, my form was just what it ought to be—round, plump, and firm, with a waist above what is fashionable in size. My powers of endurance and strength were great, and the circumstances of my father called for their exercise. My sister was exactly of another form and appearance; she was slender and delicate; her waist was very small, and owing to her delicacy and evident want of comparative physical powers, she had the more education, and performed the less labor. But this disparity, which ought to have been, and really was, in my favor, was turned to my great disadvantage and mortification. My brothers nicknamed me *broad back* and *large foot*. My father heard it, and laughed at it. My mother was ashamed of me—called me a great hulk, and twitted me of it in company. She also compelled me to lace, almost to strangulation, to reduce my healthy and comfortable form to a respectable size; and, aided by other near and dear friends, she made me actually believe that I was not fit for society, so that I was truly miserable. When ladies or gentlemen visited us, they would remark, concerning me—‘What a fine, lusty, healthful girl she is;’ and of my sister they would say, ‘What a fine figure; what a beautiful girl your daughter is;’ or, ‘You have a beautiful daughter.’ My sister’s respectable form, in addition to my hideous appearance, secured for her a double share of admiration, whilst I was left forsaken and neglected by all, which condition was made doubly painful by my keen perceptions and consciousness of deficiency. The consequence was, that I was agitated and tormented, and used every device to reduce myself to a respectable form. These efforts

to please a deluded mother, and simple brothers, and to conciliate the *respect* of a world that is looking around for something to admire, have at length ruined my health. Yes, my iron constitution is gone—gone for ever! Are *you* not then to blame? Is not *your* sex responsible for some of these things? And have not your poets and your prose writers, in their descriptions of female beauty, spoken all along of the *slender* waist that could be *spanned*, the delicate features, and other omens of premature decay? Do you not lay the corner-stone of our folly and misery, and then upbraid us for raising the superstructure? In a word, do you not arbitrate to us the standards of taste, beauty, and respectability, and tell us in a thousand ways that you admire all those physical appearances or qualities which you so justly condemn, and which we are weak enough to strive after, in order to gain your applause and admiration? We love to be sought and admired, and of course we must come up to your standard of what is admirable, and so long as you openly admire that which is not really worthy of admiration, *women will go on to practice these things*. Hence it is plain, however much we are to blame, that you do us great injustice when you hold us up to ridicule without alluding to the fact that yourselves are *mainly* responsible for the evils you condemn. Correct the fountain and the stream will be pure. Make your own sex consistent, and the evil will be quickly remedied.”

Now, who is there that cannot feel the force and see the justness of these remarks? For our own part, we can truly say, that we *felt* this eloquent appeal; but the fire was a little too hard to enable us to see with quite as much clearness and candor as the occasion required.

RESPIRATORY AND CALISTHENIC EXERCISES.

BREATHING exercises should be practiced at least three times a day, the length of the lesson being proportioned to the strength of the invalid.

It should be remembered that breathing is the first and the last act of life ; a full sweeping inspiration being, by common consent, the first thing in order after birth. It is the means by which the lungs are suddenly inflated with air, the cells opened and expanded, the arteries and capillary vessels enlarged, and a healthful circulation commenced. It cannot, therefore, be wondered at, that the interruption of so important a function as *respiration* should produce the most ruinous effects upon the system.

For the benefit of such as have paid but little or no attention to Respiratory and Calisthenic Exercises, we shall now specify a few out of an almost endless variety. But, after all, the invalid may make his own selection, provided always that he uses such a variety as is calculated to expand the different portions of the chest.

In the first place, then, take the barrel of a quill, and make a very little opening in its smallest end. Place the large end in the mouth, and then after closing the mouth and nostrils, and inhaling as much air as possible, breathe it out, slowly, through the quill, allowing none to escape in any other way. This process expands the lungs, by *forcing* the air into the cells ; the *power* to accomplish the same being furnished by the muscles of the abdomen, as may be observed by placing the hand upon the abdomen during the experiment.

Percussion is another mode of forcing the air into the little cells of the lungs, and it should be practiced over all parts of the chest ; but it may only be resorted to when the lungs are inflated ; whilst the length and force of the lesson, should always be proportioned to the strength of the subject ; and rest assured, that in a very few days you will be able, with impunity, to pound yourself with great violence. This process opens all the cells, and re-establishes the pulmonary circulation, so that the blood flows freely in and out of the lungs.

Now, all this is done on the simplest and most common

principle in nature. We know that natural exercise is the most efficient stimulus to growth and power of function. Concussion, too, calls out the powers of life, and exalts their action in a general or local manner, an illustration of which may be seen in the fact, that when the feet are nearly frozen, the blood will re-enter and warm the same, after stamping them violently a few times. So also is it with the ears and hands, when subjected to friction.

This seems to result from the law, that exercise, friction, or concussion, shall excite the vital force, and call out or invite an increased amount of it to the seat of its action, thus restoring its diminished functions. It is so with percussion. It agitates the lungs, and the vital force in them is exalted, respecting which the patient can always satisfy himself, for, if he practice aright, he will soon feel a sense of heat pervading his chest. By this action, also, the absorbents are stimulated to suck up the lymph, whereby the cells are cleared, and, if solid, or rather morbid matter in the lungs ever can be absorbed, it will thus be facilitated in nature's own way.

In practicing Calisthenic exercises, the patient should always assume the erect posture; and, if not able to do this with some degree of precision, which he may promptly decide for himself by reference to Fig. 1, he should have recourse to the Body-Brace, as this instrument will enable him to come right up to the mark without the least physical restraint. The body should be *fixed*, not yielding to the motion of the arms, but acting in all cases as the pivot, around which they are made to play. The arms should be drawn up as if the patient were about to strike some person in the stomach; and then, impulsively throwing back the body, push the clenched fist forward with great force. In the next place, bringing forward with energy your body, throw back your elbows suddenly and forcibly, as far as possible, keeping them all the while near your side. Repeat and re-repeat this exercise with constantly increasing

force and power, taking care not to overtask at any time your powers of endurance.

Now, keeping the same erect posture, and bending the arms inward, so as to bring the hands into the arm-pits, throw them down by your side suddenly and violently, inclining the hand more to the back part of the body than to the front, elevating at the same time your head and shoulders. This will straighten the spine, strengthen the muscles of the back and shoulders, and bring the body into habitual erectness, while at the same time, it tends to the establishment of a graceful and symmetrical form.

Next, put the palms of your hands upon your shoulders, and then dash them forcibly out and bring them back with violence. This exercise cannot fail to expand the chest.

Still standing erect, bring the back of your hands to your shoulders; then throw them forward with all your might, and bring them back, as in the other case, with great violence. This also expands the chest, and throws back the shoulders.

In all pulmonary affections, dumb bells should be very cautiously used at first.

There is one plan of exercising the muscles of the chest and arms, which we saw practiced in a seminary for young ladies in the city of St. Louis, and which is so admirable, that we cannot refrain from describing and recommending it to families and schools, as well as to invalids. It consists in a piece of strong shirred India rubber webbing of suspender width, from twelve to fifteen inches long, with a brass ring attached to each extremity. This is taken hold of with both hands, and stretched in all directions; sometimes, by extending both hands, and at others, by making a fulcrum of one hand, while the other does all the pulling. It has this advantage over the dumb bells, namely, that the jerking motion is arrested by the resistance of the elastic webbing.

Swinging by the hands from a rope, jumping the rope,

sawing wood, chopping and threshing, all are excellent in lessons of half an hour's duration, increasing as you are able to bear it. But as some persons may demur to the above directions, through fear of seeming to *work*, we would simply remark for their satisfaction, that it matters not to us whether they work or play, or by what name these physical efforts are known, so long as the system enjoys the exercise it requires for the healthful development of the different organs. Indeed, we would earnestly recommend callisthenic and gymnastic exercises to all who have any repugnance to work.

These important exercises, which are within the reach of all, should be practiced with vigor every morning and evening; and we cannot but regard their neglect as altogether inexcusable. They impart energy to every fiber, and if persevered in for a little while, cannot fail to promote beauty, grace, and symmetry of body.

DIET.

ABANDON the use of all narcotics, such as tea, coffee, to bacco, and opium, in all its forms. To this, you may find yourself unequal at the first; but it *must* be done, and your repeated failures to accomplish it, prove its necessity. Select, in the main, a vegetable diet. But be careful not to distend the stomach with anything, or, in other words, beware rather of the quantity than the quality. Never eat of anything, however mild, until you can eat no more, or want no more; for this would be to place yourself on a level with the swine. Do not select an impoverished diet, as the stomach would thus be compelled to labor harder to get its pittance, than it would from a richer or more nutritious one. But let the diet, whether vegetable or animal, be such as is light and easy of digestion. The stomach will then have less to do, and will be more likely to do

it well, than when taxed to analyze a mess of slops for the nourishment of the system.

For a vegetable diet, corn and rye, milk, baked or roasted potatoes, onions, tomatoes, and all this class of vegetables are wholesome.

Mutton chop is the best dish of animal food. Baked meats are unwholesome. Fat is hard to digest. Butter must be watched.

Be regular and systematic in your meals, and take no lunch during the intervals. Three times in one day is often enough to eat. Dinner should be the most substantial, and supper the lightest meal. If you would avoid unpleasant dreams, and sleep quietly during the night, eat nothing within three hours of going to rest.

SLEEPING POSTURE.

THINK not when you retire, that because you are in bed, you may be unmindful of your posture. Pillows should be just high enough to preserve a natural position of the head. The elevation or depression of the head to an angle with the body, while in the horizontal posture, produces a mechanical derangement of the process of respiration, causes restlessness and nightmare, and is also a prolific source of humped shoulders and spinal curvature. When you lie down to sleep, straighten out your body. The pernicious habit in young persons, particularly young ladies, of curling up into a heap, should be at once abandoned. It goes far towards fixing the drooped and sunken form of body, and tends to the establishment of that relaxation of the abdominal muscles, which, as we have already shown, is the bane of health and beauty.

In order to maintain the equilibrium of the circulation, it is well to change positions as often as we awake, or at least, as often as two or three times during the night.

GENERAL EXERCISE.

Be active in body and mind. This is all important and imperative, if you intend to be *cured*, as well as relieved. It is the great guarantee to energy, activity of fiber, and nervous influence.

The first exercise needed, is such as will strengthen the weak abdominal muscles, thereby restoring both the support and the movement of the internal organs. This cannot be so well effected in any way, as by exercise on the body. It is better than to have the body operating on something else.

Some time ago, a Mr. Halsted, of this city, established a mode of treating Dyspepsia, which involved some of the most rational exercises. It consisted in laying the patient on his back, and kneading him violently some two or three times a day. Also, by placing the hands at the lower belly, and violently elevating and depressing them, so as to shake the whole abdominal contents within. These two kinds of exercise were increased in violence by degrees, until the abdomen could be pummeled with great force. In conjunction with the use of the Brace, we have never known a case of constipation, tenderness of the abdomen, or indigestion, to resist the influence of this violent exercising of the abdomen. While on this head, we would speak favorably of stimulating baths, and the vigorous use of the flesh-brush, or crash towel.

The exercise of walking, though very useful and important, does not answer the end proposed, when resorted to as a remedy by those of sedentary habits, as ministers, lawyers and students. It does not furnish the necessary exercise for the muscles of the arms and the trunk, and it often fatigues the limbs without imparting energy.

Akin to this, is riding in a very easy carriage, where the elastic movement of the springs prevents the due exercise

of the patient. But still, we would not discourage either walking, or riding in an easy carriage. We would only caution the invalid against relying too much upon them. We have no hesitation, however, in saying, that riding on horseback is preferable to either. Trotting is the best equestrian exercise for those who are able to bear it. It may be well in this connection to state, that feeble persons, who may at first experience pain from the jolting effects of trotting, or who cannot bear any kind of jolting exercise, may at once overcome all unpleasantness of this nature by the application of one of our mechanical appliances, termed the TRAVELING COMPANION. Like the Body-Brace, and other instruments of the author's, it is constructed with an elliptical spring at the base of the abdomen, a feature which of itself distinguishes our instruments from all other Braces and Supports, and gives to them that superiority of action which is the basis of their wide-spread adoption.

ABLUTION.

So much has already been said by different writers about the importance of keeping the skin clean, that it is perhaps quite enough simply to remind the great majority of our readers, of the danger incurred by neglecting to wash the body, and thus allowing the avenues for the exit of its impurities, which are constantly thrown upon the surface in the form of perspiration, to become obstructed. As, however, there are many persons who may be supposed to desire some information as to the simplest, safest, most economical and best mode of performing their ablutions, and also many who have scarcely thought of their importance, we submit the following in relation thereto.

"All persons, men, women and children, should be thoroughly washed from head to foot every day of their lives. In nothing should we be more particular than in keeping the skin clean, the pores free from sebaceous mat

ter, acid secretions, and a viscid, gummy mucus ; all which produce various forms of skin disease, or are re-absorbed, and thus do incalculable mischief to the blood, to other fluids, and to all the internal organs, membranes and viscera. Some people seem to have a horror of water on their bodies, a sort of hydrophobia ; and, by the disgusting effluvia or exhalations arising from their persons, one would naturally suppose that their skins had never been cleansed since the day they were born. It is astonishing that such persons are ever well. It would be no marvel if they were diseased throughout ; if ' the whole head were sick, and the whole heart faint,' and that ' from the crown of the head to the sole of the foot, there was no soundness in them.'

Either cold or very warm water should always be used for washing the body, tepid water being least servicable."

Shower-baths are too powerful for consumptives. And, as an excellent substitute for persons in all conditions of life, is found in the following piece of advice on the subject of bathing, they *may* be dispensed with entirely, except as an article of luxury, or when recommended for some specific object by a physician. The advice alluded to, is from the pen of one of the most distinguished surgeons of his time. Here it is :

"Immediately on rising from bed, having all previously ready, take off your night dress, dip your towel in a basin of water, so that it shall be quite wet, but not dripping ; begin at your head, and rub well your hair, face, neck and ears ; then rub yourself, behind and before, from neck to heels, reaching every portion of the body. Wring out the towel, charge it afresh with water, and repeat all, except as to the head, unless that be in a heated state, when you may do so with advantage. Three minutes will now have elapsed. Then take a long coarse towel, and scrub your head, face, and body at every point, and four minutes will find you in a glow. Next, wash and rub your feet, brush your hair, and complete your toilette ; and, trust me, this

will give a new zest to your existence. A mile of walking may be added with advantage."

Those who are delicate and easily chilled by such exposure to cold air and water, will find this spirited performance somewhat modified, in the following unique description of a towel bath, said to be written by a lady to one of her female friends.

"You only want a basin of water, a towel, a rag, and five minutes' time. When you get up in the morning, pin a petticoat very loosely around your waist, draw your arms out of the sleeves of your chemise, and let it drop to your waist. Take your rag, well wetted, and slap your head and shoulders, rub your arms and chest, and throw handfuls of water around your ears and back of your neck. Then throw your towel across your back, holding one end in each hand, and 'saw' it dry. Rub fast, until your back is in a glow. Then put on a night gown to keep you from feeling chilly. Now tuck your skirts up under one arm, until you wash and dry one limb; then drop that side and do the other likewise; making sure that the small of the back and the sides get their full share of rubbing. This done, sit down, dip one foot in the basin, rub and dry it, put on your stocking and shoe, and then wash the other."

For persons in health, pure water only is necessary. But invalids, especially those who are so debilitated that they cannot rise from their beds, should, when they have little or no fever, be washed two or three times a day in cold salt and water, a towel, as above, or a soft sponge, being used for the purpose, and the body gently rubbed until it is perfectly dry, proper care being taken to prevent the bedding and the patient's clothes from getting wet. Thus kindly dealt with under the genial influence of salt and water, he cannot fail to be greatly strengthened and refreshed.

"When the patient is feverish, the best thing is water in which enough *saleratus* has been added to make it feel between the thumb and finger a little slippery, like soap suds.

This is far better than soap, as it does not leave the skin tight and glossy like soap. The alkali, uniting with the oily matter and acids of the skin, removes them more effectually than soaped water can, and thus attracts the blood into the minute blood-vessels of the cutaneous tissue. This wash will prove itself to be one of the best things ever used in fevers; and with it the patient should be sponged as often as he becomes dry and hot. Indeed, we would, in common with many others, earnestly recommend *all* persons to wash the whole body in this saleratus water, at least once a week in winter, and twice a week in summer."

Children who are in great pain from inflammation of the gums when teething, or who are in a high worm fever, or seized with a fit, should be promptly plunged into a saleratus bath, *as warm as can be borne*, and kept there for five, ten or fifteen minutes, as the case may be, until they are relieved, hot water being added from time to time to keep up the temperature, as high as the skin or the system will bear.

This hot saleratus water is also one of the best remedies used as a bath for cold feet, or as a foot-bath in all cases of great determination of blood to the head.

When the head is very hot, keep it wet with cold water, or keep a cold wet cloth around it, dipping it into cold water as often as it becomes warm or begins to smoke."

Those who suffer from pain and tightness in the chest, or from pain and weakness in the side or back, may be relieved by applying to the affected part a cloth dipped in cold water, wrung moderately dry and folded two or three times, the same being covered with a dry towel, folded in the same manner, to keep the moisture from the clothes.

INJURIOUS TENDENCY OF THE PRESENT STYLE OF SOFAS,
CHAIRS, AND OTHER SEATS, AND THE INTRODUCTION OF A
NEW STYLE, ON PHYSIOLOGICAL PRINCIPLES.

PROBABLY no subject of equal importance has ever been so much neglected, as the adaptation of sofas, chairs, and other seats, to the wants of the body. Indeed, there can be no doubt, that the construction of these articles, especially the present genteel parlor chair, is a prominent cause of spinal affection and compression of the chest, weakness of the back and lungs, voice, stomach and bowels. We also hold, that herein is the chief cause of the almost universal uterine weaknesses and their attendants. The only part of the back supported by these ruinous contrivances for parlors, churches and schools, is the region of the shoulders, the very locality which requires nothing of the kind, but which, on the contrary, demands the utmost freedom. The small and weak part, or hollow of the back, the only point which requires support, is thus entirely neglected, whilst the sitter is compelled to droop his shoulders and hump his back, in order to fit himself to the chair or other seat, as the case might be. He is also frequently obliged to change positions, twisting and contorting his body to obtain relief from the pressing and cutting of the top of the chairback against his shoulder-blades, until at length, the crushed and overstrained loins are forced to take refuge or seek repose in the upright posture.

Notwithstanding all this, we still find men, women and children, of all sizes and shapes, scrambling for, and attempting to fit themselves in, one and the same chair, whereas, it must be obvious to the reader, that if a seat which is essential to symmetry and ease, shall exactly fit a full grown man or woman, it cannot also fit half grown persons and young children.

Being much annoyed with this painful condition of things,

and stimulated by the humiliating consideration, that scientific researches had not hitherto resulted in the establishment of any settled principles for the construction of seats, we have, after much patient investigation of the subject, been enabled to develop, for the lovers of health and symmetry, the *true physiological construction* of chairs, sofas, and other seats, for parlors, churches, and schools. (See Figs. 28 and 29, pp. 288 and 289.)

As intimated above, this sort of furniture should be arranged to suit the different periods of life, from infancy to maturity, which would, of course, involve the manufacture of *groups* of chairs and other seats, the articles being numbered from one to four, according to the number of sizes composing the group.

But owing to the difficulty in conveying, in this form, an adequate idea of the peculiar yet simple construction of these physiological articles, and being unwilling that the public should lack any practical knowledge we might possess concerning the same, we have caused a group of the chairs, a sofa, and a large rocker, to be made in the best style, and placed in our office, 21 Mercer street, for our own personal use, and the inspection of all persons interested in the subject.

Fig. 30.



FIG. 30.—*Ordinary style of Chair, causing drooping, and painful weakness of the back, chest and stomach, by pressing only against the shoulders*

Fig. 31.



FIG. 31.—*Banning's Improved Physiological Chair, supporting the small of the back, throwing out the chest, improving the form, and relieving pains in the spine, shoulders and breast.*

A LECTURE

ON THE

PHILOSOPHY OF THE HUMAN VOICE,

CONTAINING IMPORTANT HINTS

TO

PUBLIC SPEAKERS AND SINGERS.

BY

EDMUND P BANNING, M.D.



LECTURE

ON THE

PHILOSOPHY OF THE HUMAN VOICE.

LADIES AND GENTLEMEN :

THAT "there is a right way of doing everything," is an oft-repeated adage, the due observance of which has ever been attended with satisfaction and pleasure. Its application, however, to the production of Voice is almost completely lost sight of. It is true, that in singing, such things as compass, modulation and inflection, are held to be essential. But it would seem, that in speaking, the wisdom of the adage had been studiously avoided, and the wrong way deliberately pursued. Indeed, so wide-spread is the evil, that it is beginning to be no uncommon thing to say of the public speaker, "Oh, I care nothing about his voice; I look for development of mind."

Now, surely if vocal culture be necessary to set forth the sentiment of song, it is also necessary to render speech effective; and especially so, when it is considered, that speaking is but a comparative degree of musical utterance.

The true sentiment of speech can only be realized when the speaker approaches his auditors in the order of their *physical* as well as intellectual nature, and this can only be accomplished when attitude, gesture, and voice, are all employed to the best advantage. It should be borne in mind, that the outer man, with its senses and susceptibilities, is the great avenue to the inner, and that therefore

the speaker should be a man of good and acceptable physical as well as intellectual and moral manifestations. He must be able to subdue the inner man, by appealing through the same susceptibilities as does the hero of the stage, when he sets the mere combustibles of the soul on fire. But if the voice be destitute of volume and music, the speaker lacks the power on which he *must* rely, if he would fire the soul and sway the mind.

When we look around, and see great numbers of the sweetest singers hanging their harps upon the willows; when we see the most eloquent counselors retiring from the bar, and the profoundest statesmen silenced in the halls of their country; when we see thousands of the Messengers of Peace, dropping like stars from their orbits, and doomed to perpetual silence, their message not half delivered; and all for want of a correct knowledge of the nature and properties of the human voice, we feel that we have a mission of great importance and responsibility to perform, and we are oppressed with the fullness and value of our subject, and of our own personal inadequacy to exemplify the views we are called upon to advance; and were it not for the fact that a great improvement had taken place in the voice now sounding in your ears; that its present defective tones are in marvelous contrast with its once ruined condition, when the ludicrous noise of the gosling was only interrupted by broken, splintered and whispering articulations, we could not have been persuaded to meet this assembly. We therefore beg that our own imperfect voice, which is still undergoing improvement, may not be allowed to affect your minds unfavorably, in regard to the views we are about to express.

The object of the present Lecture is, to demonstrate that the diseases incident to public speakers and singers may be both prevented and relieved, and the weakest and harshest voice made strong and melodious; in doing which,

we shall first invite your attention to some remarks on the *production* of voice.

One of the most common errors is to confound cause and effect, and to mistake the latter for the former, the manifestation for the producing cause. Hence the prevalent opinion that the chest, lungs, and throat are the organs to be used in the production of voice. But it is a still more common error to locate cause and effect in close proximity, whereas the effect is an ultimate, and proceeds always as far away as possible from the cause, before it manifests itself. This is an immutable law.

The electricity generated at the cylinder, industriously seeks the end of the wire, to flash forth the proofs of its existence. The effect of the cannon ball is not in or near the gun. Precisely so, is it with the human voice. Generated, so to speak, at the base of the pyramid or trunk, it ascends to the throat, and manifests itself in that remote locality.

Let it be observed, then, that all the varied and sensible phenomena of expiration are, in conjunction with atmospheric pressure, produced by the contraction of the abdominal and dorsal muscles upon the viscera, so that the viscera, by being continuously pressed against each other, from below upward, shall act upon the lungs at each muscular contraction, and thus mechanically expel the air. The throat and its attachments perform the same office in speaking, that the fingers perform in playing on the flute. They have no agency in the creation or expulsion of sound, except their modulation of the same, which is denominated voice.

The human trunk is governed and moved on much the same principle as a pair of bellows, and may, in most respects be compared with the same; the throat or wind-pipe, answering to the passive metallic pipe or nose of the bellows; the chest, to the great vault or cheek, having, like the bellows, no *self-contracting* power by which to expel

the air. The abdominal muscles answer to the handles of the bellows, shutting or contracting the vault by their proper action, compressing the furniture within, and forcing it against the lungs, thus mechanically expelling the air. We also see, that like the handles of the bellows, the abdominal muscles are situated at the most remote and largest part of the chest or vault, to increase their force of leverage on the same, at its most movable part. Now, who in using a pair of bellows, would seize them by the sides or nose? And yet every one who attempts to talk from the lungs or throat performs an act equally absurd.

Another common-sense illustration of the production of voice, may be derived from the use of fire-arms. Take, for instance, the rifle. In order that this instrument may be effective, three conditions are essential. First, the powder must be burned behind the bullet; secondly, the bore of the rifle must be straight, and thirdly, the muzzle of the gun must be at least as large as the bullet. In speaking, the air expired is the bullet; muscular force is the powder; the lungs and throat form the gun-barrel, and the mouth is the muzzle. You will at once perceive the application of the three conditions just mentioned, as being absolutely necessary in the use of fire-arms, to the production of the *voice*, if we would speak effectively. The propelling force must lie at the base of the gun-barrel, in the abdominal muscles; the body must be erect, the chin elevated, and the mouth well opened, so as to allow the sound to escape freely. Violate any of these conditions, and the effect will be marred, the voice will be injured, the lungs weakened, and the whole constitution impaired.

So true, indeed, is it, that articulated sound is the result of abdominal effort, that if the viscera are suddenly elevated against the lungs, with a favorable position of the vocal tube, dead or alive the man must speak! This may seem incredible. It is nevertheless true, as an illustration from

the history of our own experience will sufficiently show :— Many years ago, a party of body-snatchers started off, in bold defiance of popular feeling, to possess themselves of a new subject. But fearing detection, and being in great haste to escape with the body, they laid it rather roughly on its back across a rail; when, by a sudden contraction of the abdomen, a most unearthly and terrific sound was expelled through the vocal tube, causing every hair to stand erect upon the heads of the disturbers of the dead man's repose. And so much of a reality was this voice from the dead, that one of the resurrectionists instinctively seized a club to inflict a blow upon his supernatural adversary, for whom, in the dark, he mistook one of his associates, and commenced beating him with a will. The man thus attacked, returned the blows, being unable, even with the assistance of his other comrade, who had now recovered from his fright, to convince the possessor of the weapon that he was contending with a mere phantom of the imagination; for, the striking demonstrations he was receiving, made him feel, that even if it be true that "dead men tell no tales," they will sometimes deal hard blows.

Another illustration of this principle once occurred in so humorous a way, and shed so much incontrovertible and unequivocal light upon the matter, that we cannot refrain from introducing it on this occasion.

In a recent course of lectures we remarked upon this subject, that such was the control of the abdominal muscles in the production of voice, that even in a case of nightmare, the reason why the individual never could speak, was that he invariably made all his effort no lower than his throat, leaving the abdominal muscles entirely out of the question; and also, that in such case, if the sufferer could summon up his resolution, cease all effort either to run, or to speak from the chest and throat, and concentrate all the force of the will upon the abdominal muscles,

summoning them to a general contraction, and attempting at the same time the syllable *boo*! he would undoubtedly succeed, and instantly awake.

On a certain night, the lady of the good parson of the town in which we were lecturing, having been present at the lecture, retired late to rest, with the new doctrine of "speaking from the abdomen," strongly impressed upon her mind. It was so new and strange to her, that she dropped asleep while reflecting on the subject. A dreadful paroxysm of nightmare soon followed, when she imagined that a furious bull was about to transfix her with his horns. Fly or speak she could not; but, in the half-conscious state, so usual in this condition, she recollected what had been said, and resolutely attempted, as for her life, by a contractile effort of the *abdomen*, to sound the syllable *boo*! and, to her utter astonishment, succeeded in making so *decided* a boo, as not only to throw herself bolt upright in bed, but also to annihilate the bull, arouse the good parson from his theological slumbers, and so alarm her son, who slept in a remote part of the house, that he bounded down stairs, shouting at the top of his voice, "*What on earth is the matter with mother!*" After an explanation and a concert of laughter, the order-loving household again sunk to repose, imbued with more enlarged views of vocal utterance.

Thus we deduce from the stiffened and lifeless jaws of Death, and his benign sister, Sleep, even from the spell of the demon Nightmare, strong arguments attesting the motive power of voice, which must, at least, have great weight in establishing the position here assumed.

The great secret of developing and preserving the voice, lies in the due exercise of the organs which produce and modulate the same; and, if we mistake not, a few illustrations from the speaking part of the brute creation, will serve to show, that when the erect posture is maintained, and the abdominal and dorsal muscles, as well as the

mouth and the throat, properly used, the voice will not become impaired, even by the most protracted vocal efforts.

First, then, let me direct your attention to the case of the Dog. Who has not, in long restless nights, endured his endless bark, bark, bark, sustained by the hope that he would become hoarse and weary. But he barks on, as though the world hung upon his vigilance, and that, too, without any signs of bronchitis or fatigue. Now if you would understand the principle on which he makes all this noise without getting tired, notice, just as he is about to speak, how he spreads his feet, extends his nose, straightens his neck, and then causes a sudden contraction or snapping of his abdomen, particularly near his hips, that seems as suddenly to push all the viscera to his mouth, which being instantly opened, lets the bark out; the air having been urged to the mouth by abdominal effort, and all, without any agitation about the throat or chest. And when he howls out his dismal melancholy in long and mournful syllables, this principle is still carried out. He generally takes a full inspiration, and makes one long and continuous contraction of the abdominal vault, in lieu of many short ones, which is followed by a sound corresponding in length with the contraction. And let me here ask, was it ever heard, has it ever been known, that a dog was made hoarse by barking?

The Cow, too, when she lows her wild wail for her lost young, affords a still more powerful illustration of this subject. See how she separates her feet, in order to give firmness to all her muscles, and mark the convulsions going on at the same time in her great leathern vault. The whole abdomen is lifted upward and forward, the neck extended, and the mouth widely opened, emitting, without the least effort about the chest or throat, the clear and mellow low, which continues till the abdomen drops.

Nor does the spirited Horse, when he sends up his quiv

ering, majestic neigh, show the slightest agitation at, or near his mouth, nostrils, or chest, these organs being used, as in the case of the preceding instances, simply to modulate the sound. But, if you lay your hand upon his flank, you will feel muscular vibrations which are perfectly synchronous with the rapid sounds at his mouth.

Finding myself on one occasion in the midst of an orchestra of frogs, where every part was well represented with great ease and perfection, I was particularly attracted by the deep double bass "*borran*," *borran*," of the leader. Wondering how so insignificant a personage could incessantly fill an area of more than a mile with his notes without fatigue or hoarseness, I peered over the side of an old mossy log, and to my great satisfaction discovered the patriarch of the band, who seemed for a time to be quite overcome by modesty, at the gaze of his unexpected auditor. But he soon recovered himself, and with manifest confidence in the inquiring earnestness of my looks, his leathern sides expanded to their utmost capacity. With his round mouth amply opened, he then commenced contracting his sides, from his flanks forward, and the "*borran*" came of itself, without any effort or agitation whatever about his throat or chest.

We cannot conclude these arguments from the brute creation without referring to the Swine, for there is no animal that furnishes a better illustration of the position we have assumed.

Observe him as he goes along beside some corn-field fence, indulging himself in his own peculiarly independent and hoggish soliloquy. Listen first to his perfect staccato enunciation, "grunt, grunt, grunt;" and then mark the precision with which he commences and finishes each syllable, and how distinct the interim. There is something in his tones indicating that the sound is *boosted*, and not *squeezed* out, as is the case by many of our fashionable speakers and singers. Mark also his manner of doing it.

Look at him, and you will see sudden contractions of his abdomen, which, hiccough-like, seem to urge or punch all the viscera against his lungs. You will perceive, too, that the sounds are made simultaneously with the abdominal movement, and that their duration and spasmodic character, are also in exact correspondence with the same. This is his *conversational* speech. Now, observe him in the pathetic, when a canine police is holding him fast by the ear, leading him out of mischief. How differently he manages this same principle. Gathering his feet into a huddle, he humps up his back, takes a full, sweeping inspiration, thus expanding his lungs and tensing his muscles to their utmost, opens wide his mouth, concentrates all his energies in contracting his abdomen, which shuts down upon the viscera, and then in long, harsh, and piercing cries, he brings even the heart of the mastiff to terms. And yet, of all his kind, was it ever known that one became hoarse from public speaking?

But we are not confined to the beasts, for demonstrative arguments in support of our theory. You have only to listen to the deep, guttural, and proud tones of the untutored Indian, to feel that he speaks from the deeps; that he, too, *boasts* or *lifts* out his characteristic tones. His stately form and erect head, indicate the tense and firm condition of his abdominal muscles. These are just adapted by their *slightest* contraction to compress the lungs and force the air through the comparatively straight vocal tube. And, when he sings his war-song, and yells his war-whoop, he is able by this means to make the welkin ring, and drive terror into the very bones of his enemies. Yet, I have been unable to learn that an Indian was ever hoarse or bronchitic, from vocal effort. His physical habits for bid it.

Take next the Infant, before he is old enough to go astray. Lay him upon his back for a cold wash. See how he pushes out his feet, and spreads his toes, thrusts

out his arms and clinches his fists ; how he throws back his head, opens his mouth, straightens his spine, draws in a full inspiration, contracts his abdomen, concentrates *all* his energies in one strong pull, and a pull all together of his muscles, whereby the lungs are directly compressed, and *don't he scream ?* repeating, and re-repeating the charge, with undiminished energy and clearness, until the house is brought to terms, and all without the least hoarseness, or inconvenience to himself ? Now lay your hand upon his abdomen at the zenith of one of his screams. The contracted abdominal muscles will be found so tense, that you will begin to fancy your hand in contact with a satchel of live snakes. But so soon as he relaxes his muscles for a new expiration, his abdomen is as soft as down. The same principle also applies to all instinctive and involuntary utterances, common and necessary to the action of the physical organization, which, to the reflective mind, needs no specification.

Public speakers, especially clergymen, who suffer from bronchitis and other vocal derangements, usually suppose that the pain and weariness of the back, the constipation, the indigestion, and great sense of vacancy and "*goneness*" in the region of the stomach and breast, which they generally experience, are all caused by the affection of their throat, and accordingly expend much money, and oftentimes much vital energy, by local and constitutional appliances therefor, in the hope, as they often express it, of "preserving the power to serve in the sanctuary ;" whereas their physical indolence and indiscretion, have induced a relaxation of the muscles, and a consequent derangement of the viscera and nervous system, producing a train of evils which subsequently, if not simultaneously, affect the throat, thus affording to all an easy illustration of the way in which the effect is mistaken for the cause. The difficulty generally begins at college, where the body is too often unscrupulously robbed to benefit the mind, just as though

a clergyman was expected to live without a body, or as though his mind was practically anything without a healthful body. The ground-work of ruin once laid, it is easy enough to go on in a lazy and lounging manner of studying and preaching, until the wreck is complete ; and then, forsooth, this breaking down of body and mind is quaintly, if not wickedly termed, "wearing out in the gospel!"

The ordinary bronchitis of speakers and singers, is a diseased condition of the lining membrane of the throat, wind-pipe and air-cells. Some of the varieties of this disease proceed from a constitutional cause, and of course require constitutional treatment. This part of the subject does not fairly come within the scope of the present lecture. It is the province of the skillful practitioner, to decide whether the disease is local, physical, or constitutional. Ordinary cases are of a mixed character, and require corresponding treatment. There is usually a sense of dryness and roughness in the throat, and an aching which is aggravated by speaking or singing, producing a hoarse or flat and husky voice, which is painful to the sympathetic ear, and easily distinguished from the natural tone by a susceptible observer. (See *Morbid Effects of Relaxation upon the Vocal Organs*, p. 82.)

In order to exhibit the cause of this disease and of other vocal derangements, let us take the case of a minister who preaches calmly by note from a low desk, with the head depressed, the shoulders drooping, and the mouth not freely opened. (See Fig. 30, p. 304.) First, then, he bends forward, and relaxes the muscles of the abdomen, which lets down the viscera from supporting the diaphragm, and thus deprives himself of the proper vocal leverage, the starting-point in the production of the voice. Next, he contracts the dimensions of the lower chest, and of course compresses the lung there, compelling the superior lobes to do more than their part. In the next place he is compelled to speak by the contraction of the chest, caused



FIG. 30.—Squeezing out the sounds; or, speaking without proper vocal leverage; the mouth being nearly shut, and the muscles of the abdomen relaxed.

by bending forward and inclining his shoulders, and not by the uplifting of the abdomen, as he should speak. The expelling power is thus applied at right angles and not in a direct line. Of course, then, more power is required and more force is exerted in this unnatural mode upon the tubes or air cells, inducing a straining or concussion in them, which is both painful and permanently injurious. Besides, under these circumstances, the air is not expelled directly upward, but sent out in all directions, and thus a general concussion is produced, together with a confused and vibrating motion, instead of a smooth, continuous, and melodious sound.

Thus it appears that bending the head forward in speaking, presents a natural obstacle to the progress of the air, making it strike the palatine arch or roof of the mouth, whence it again rebounds, producing a general vibration in the whole column of air, and of course, a more or less violent and extensive concussion of the lungs. The air is expelled by a continual sideways and oblique pressure, in lieu of the direct and alternating pressure and collapse of the abdomen. When the mouth is not opened freely, as in this posture it cannot be, the exit for the air is not commensurate with the volume passing upward and seeking egress. This constitutes another mechanical obstruction, which again increases the concussion and scatters the air, driving some of it through the clenched teeth, or the elongated mouth—a shape not celebrated for producing the proper sounds of the vowels—and forcing it backward and out of the nostrils. Hence that splintering, whizzing, and nasal sound, so peculiar to the people called Yankees. Nor will this attitude permit the lips to do their part in forming the sounds into articulate or distinct words. On the contrary, the entire labor of this operation is performed by the throat—great soreness and fatigue being thereby produced, a consequence of which many are but too well assured.

Now, with the true philosophy of the voice before you, and the morbid practices of the subject of bronchitis, you will want to know something about the proper course to be pursued in restoring the voice to its natural tone, and enabling this class of invalids to go on their way rejoicing.

To the public speaker, then, we say, you must stand erect, elevate the head, move the lips freely, vary the shape of your mouth so as to cause the various vowel sounds to be clearly emitted, and expand your chest. The body should talk all at once. Let neck and heels turn speaker. Strive to concentrate the will upon the abdominal muscles, so as to effect their sudden contraction at each syllable, as in ejaculating the word *shoo!*

Singers should hold their books high, and keep the waist free, the chin elevated, the mouth open, and recollect that it is the *genuineness* more than the *amount* of abdominal effort which is needed; for, by making too much effort, the air will be expelled with too much force, producing a ragged and broken sound, and a painful sensation in the throat.

Ministers of the gospel should leave off preaching by note, or use an elevated framework to hold their manuscript, so that they can stand erect, at some distance, and yet read distinctly by merely casting the eye upon the page without bending the head or back. They can then see their audience, and the audience in turn may see the minister's *face*, not the top of his head. His attitude will thus become correct, to say nothing of the more graceful and manly bearing, and his vocal organs performing each their appropriate work, the speaker will stand some reasonable chance of holding the attention of his people. His voice will also be clear and of a large volume, pleasant alike to himself and his hearers; and though his throat be sore, dry, and stiff, he may continue to preach not only without further injury, but almost without inconvenience, for every effort he now makes will contribute to the improvement of his voice, just in the same way that a limb diseased from

want of proper exercise shall improve by the supply of that want.

[The author regrets his inability to illustrate this point, the human voice itself being essential for the purpose. It may, however be proper to say, that, in delivering this lecture, several illustrative examples were given, in the form of recitations. Some of these involved such painful and destructive vociferations, that in a very few moments his voice became so ragged and husky, that he could scarcely be heard; whilst others, choosing a proper attitude and delivery, had the effect of restoring, almost instantly, its fullness and melody. In other words, he exhibited, as he afterwards learned, to the satisfaction of the audience, *the power to rend, and repair his voice, at pleasure.*]

But, as it would seem, lest heaven should become mixed with earth, many clergymen assume just enough of slovenliness, clumsiness, and stupidity of attitude, to fetter the wings of feeling, stupefy the animal and intellectual sensibilities, and leave the naked and unaided truth to fall upon the heart as a weight falls upon wool, making no abiding impression.

If you were to ask me to direct your attention to some living model, touching the attitude and gesture of a speaker, I would say, look at HENRY CLAY, and you will see the whole thing exemplified. He rises from his seat with dignity and grace; nor does he stop, until he emphatically *stands* before you, an erect and towering oracle of attraction and intelligence. By virtue of his physical nature alone, as it looms up in the symmetrical form, the lofty head, and magnanimous countenance, he commands and rivets attention, and makes the heart swell with expectation. When he speaks, there is a majestic mildness in his manner, and a music in his utterance, which are derived from the undiminished erectness of his body and head, and the ample opening and unrestrained play of his lips. The whole ideal of every tasteful hearer's concep-



FIG. 31.—*The Popular Speaker, lifting or boosting out his melodious
tones*

tion is completely filled. His auditors are not compelled to wait for interest until the momentum of the speaker and the induction of his logic have taken possession of them; but, from the moment he rises or begins to speak, every bosom burns with a deep-felt conviction, that a soul of no ordinary magnitude and luster dwells within that house of clay. As he warms up, unrestrained by desk or notes, which would compel him to lean or to bow his head, he stands yet more proudly, his imagery and emphasis finding expression in wide, expansive, and vigorous gestures, upward, outward, and downward, not in one-sided spasms that jerk the speaker about, but in free and well-balanced movements, having the body for their fulcrum, and around which the arms instinctively play, expressing much which the tongue may not utter. Thus we see how it is, setting aside the intellectual force of the man, that Henry Clay has become the Orator of the Union and the Magician of the Heart; and how that amid a host of cotemporary giants, he is a head and shoulders above them all. Who can estimate the influence of such a man upon a sleepy, stupid, or obstinate auditory?

But after all, though beautiful and desirable it be to stand forth as a Man (See Fig. 30, p. 308), how few aspire to the true dignity of manhood. Physical education is not deemed necessary to the formation of the noble structure, and yet every one knows that the mere cultivation of the intellect is not a sufficient guarantee for an erect and symmetrical form of body. It is a lamentable thing that man should live on, generation after generation, as though he were totally incapable of appreciating the loftiness and the loveliness of his physical bearing. And why should the generality of mankind be content with a posture not sufficiently erect to please even the Orang-outang, who, although he is quite as straight as most people of the present day, is yet apparently annoyed by his inability to reach what he conceives to be the ideal of a man. Who has not admired

the grinning grace with which this animal strives to stand erect? Yes, ladies and gentlemen, the Orang-outang does his best to be a man; and man, in turn, does his best to be an Orang-outang! The one is successful; the other is not. The one is continually foiled in his uncouth efforts to get up like a man; the other would be equally unsuccessful, did not his superior intelligence enable him to appreciate the proverb, that the bending of the twig secures the inclination of the tree.

No matter how flat and disagreeable the human voice, it may, by proper culture, which, be it remembered, is incompatible with the slightest deviation from the erect posture, be fitted for the most charming displays of vocal utterance, either in speaking or singing.

A powerful argument in support of the correctness of the rules here laid down, for developing and improving the voice, is found in the fact, that Methodist preachers and lawyers, whose professional habits resist the encroachments of civilization upon the erect posture, complain less of bronchitis than other public speakers. And it is also worthy of remark, in this connection, that fashionable ladies of the Grecian bend, are eliciting the sympathies and counsels of this benevolent age.

It is astonishing how rapidly persons improve when they begin to be familiar with these simple rules. However unsuccessful, therefore, may be the first attempt, let me entreat you to persevere in the important work. It is impossible to determine what may be acquired without a fair trial. If your experiments are attended with pain in the back, languor, and weakness of the stomach, or if you find it hard to obtain the mastery over the abdominal muscles, you should at once seek mechanical support, to elevate and sustain the sunken organs. Experience teaches that almost every case of vocal derangement is attributable to some manifest violation of the laws which govern the mechanism of the human frame. Scarcely if at all is it

realized, that the body of the first man was perfect, *before* the breath of life was breathed into it; that the vital principle was but an appendage to set this perfect machinery in operation, and that, consequently, all healthful action in man, as in any other machine, is produced by, and depends upon, the matter and mechanism, not the moving principle.

If we fully realized the important truth, that sooner or later the day of reckoning about the use of our bodies must surely come, more of the time and talent of the present age would be enlisted in the cause of physical education. Nor would mechanical pathology be so much neglected, as that a class of diseases, not cognizant of medicine, and which from their very nature, can only be aggravated by constitutional treatment, should be spread upon the list of human woes. Alas! the watchmen are asleep; the world is almost intoxicated with psychological abstractions; and, the once noble and imposing physical structure of man, is fast receding before the destructive influences of polished, *civilized* life!

And now, Ladies and Gentlemen, allow me, after thanking you for your indulgence, to ask your forgiveness for the bluntness with which I have borne down upon the habits of public speakers and singers; and also to assure you, that the rough vein of humor which has pervaded a subject of the gravest importance to mankind, is not to be viewed as a part of my design, but rather as the legitimate attendant of the illustrations necessary to the accomplishment of the task I have thus honestly endeavored to perform.

In conclusion, let me say, that I should be untrue to Medical Science and the best interests of Society, as well as to myself, if I did not here remark, that the treatment of diseases originating from improper postures in speaking and singing, consists in the *mechanical replacement of the organs*, and in attending to such things as shall restore to them the power to preserve their natural and reciprocal relations.

After many years of laborious research, we have been enabled to place within the reach of all a complete system of Mechanical Appliances, physiologically adapted to the displaced mechanism of the body. And we here pledge ourselves to decide in a very few moments whether any person suffering from bronchitis, or other affections of the throat, can be relieved, either in conjunction with, or independent of, Mechanical Support.

LECTURE ON DRESS,

IN WHICH ARE SET FORTH

THE EVILS OF THE PRESENT STYLE,

AND

Rules for the Regulation of Male and Female Attire.

BY

EDMUND P. BANNING, M.D.



LECTURE ON DRESS.

LADIES AND GENTLEMEN :

You will remember, that on a previous occasion we endeavored to demonstrate the influence of Posture on symmetry, health, and longevity. Our subject for this evening is DRESS, considered as effecting the same ends. It naturally succeeds the last lecture, and is presented as the closing argument of the course you have done me the honor to attend.

Before proceeding, we would simply remark, that the recent animated discussion of the need and practicability of a reform in female dress, which we regret to say was confined chiefly to the shortening of the attire, has not in the least degree suggested or pointed out the present subject. On the contrary, the topic now before us is the necessary ultimate of the development of the true physical science of life, and, as such, its omission would be an unpardonable disregard of a plain and manifest duty. We desire, however, frankly to acknowledge, that what has been already offered to the public on this subject, has not failed to inspire us with hope and gratulation, even though it has been strongly marked with that temporizing timidity, which, to obtain a few minor concessions, conceals those destructive dictates of fashion, the true abhorrence of which, if once fairly exposed, by a just representation of the laws of our physical existence, those laws which must eventually determine the intrinsic value of conflicting views of dress, would compel conviction, and thus produce a radical revolution in every rational mind.

We have long since been led to regard the entire present system of dress, especially that of the lovelier and fairer half of creation, as an engine of inconvenience, disease, and death. Indeed, we had almost said, that that spirit of evil who walketh up and down the earth seeking prey, had taken woman captive and riveted her fetters, by presenting them under the specious guise of modesty, propriety, and duty.

Like a valuable young tree, skillfully trained and pruned at the top, but totally neglected at the root, this great subject is now trembling between life and death. The public mind is almost weary of the puerile gossip of those who see involved no principle, no real good, but mere whims of morbid taste. It is not, however, a question of taste, as taste is now understood. Yet if, as we think is the case, the true test of the standard of correct taste, be its accordance with the primary laws of life, then, indeed, the dress of the body becomes, emphatically, a question of taste. But when the enormities of fashion come to be regarded as the standard of taste, our only security is to go to the very root of the matter. Let us therefore fling to the winds all irrelevant considerations, and not be diverted from our object by the size, length, or construction of any costume for its own sake, but rather let us seek the true ideal of a costume that shall be at once healthful, convenient, adapted in all respects to the human form, its organization and needs, and, thus originated, peculiarly AMERICAN.

Notwithstanding some seem to suppose that the body is a mere appendage of the dress, we are still among those who gravely hold that dress is but an adjunct or appendage of the body. We shall therefore insist upon it that the formation, laws, and wants of the body should designate and determine the construction, quantity, and quality of the dress; so that the most refined taste in the choice



FIG. 32.—Physiological arrangement of Dress; depending from the shoulders, and involving the natural freedom of the limbs and waist—the skirts being just long enough to prevent stepping upon them in ascending a flight of stairs.

and arrangement of dress shall be exercised with the strictest regard to the laws of anatomy and physiology. If we may but enter upon our subject with unbiased minds, seeking only truth, the way, to the speaker at least, will be smooth and pleasant.

The human body is the masterpiece of all organized matter which is constructed for the discharge of definite function, and is doubtless arranged with a due regard to strict mechanical principles. The design is for a certain end, and the great Architect has made nothing in vain. There is no superfluous matter, no useless parts, no deficiency or excess of force. Every organ is perfectly and exactly adapted to its use, and this use is in harmony with the physical, mental, moral, and spiritual needs of the human being. The health and perfection of the physical organization is as essential to the development of mind, as is the completeness of a musical instrument to the production of harmony. The consideration of physical science, in a mechanical point of view, may, from the mere novelty of the thing, require illustration or demonstration; but the *importance* of this branch of science it is scarcely necessary to name.

It must be evident to every one, that the whole system of vital organs, to act healthfully, must first be *kept in place*; and this is to be accomplished by the surrounding muscles. The muscular action is steady, elastic, and supporting. No organ is left by nature to hang or depend upon another, without a sufficient counterpoise to its weight on the adjacent muscles, the peculiar adaptation of which to their respective offices, is in most curious and admirable perfection. Whatever tends to disable these muscles, or to interrupt or prevent their proper action, detracts in exact proportion from the support required by the vital organs, and subjects them to a series of local and general derangement. This effect has been found in almost numberless instances to follow from the ruinous weight and com

pression of the prevailing modes of dress, by which the muscles in question are chiefly acted upon.

Nature demands of us all an intelligent and cordial observance of her dictates, and the lovers of health and symmetry will unite with the ardent disciple of truth in ascertaining her laws and requirements.

Dress, regarded as an ever-active agent on the human body, changing even its shape, forcing its organs into new localities, and thus destroying the harmony of its mechanical relations, doing serious injury, instead of promoting health, ease, and comfort, by warming, adorning, and shielding the body, becomes a fit theme of investigation for every thinking mind. It is by no means to be viewed as a childish affair, unworthy of serious attention, and deservedly abandoned to the whims and caprices of the unthinking multitude. Fashion is at best but a succession of irrational contrivances to benefit milliners and tailors; and it is earnestly hoped that a straightforward appeal to reason and common sense, will at least shake the throne of the tyrant. This, however, is a matter that more especially concerns my present audience.

Ladies and Gentlemen,—It is *your* affair, and it is one of moment and *pressure*; to the ladies, perhaps, it is too decidedly an affair of pressure; for while it is almost universally admitted that the present style of female dress acts as a restraint upon the natural freedom of the limbs, and crowds upon the domain of the chest, in a way that effectually destroys its natural function as a perfect inspiratory apparatus, and that it also impedes the labor of expiration, by pressing downward and inward upon the abdominal and pelvic viscera, yet still the day of reform is hardly in its dawn.

It is indeed true, that the men of the nineteenth century claim that they have begun to appreciate the influence of woman, and that they are deeply interested in her welfare; but their dreamy pretensions, their poetry, their adulations,

submissive glances and high-toned philanthropic professions, are all sadly at variance with their fatal indifference to the gigantic evils of her present style of dress. O ye husbands and fathers ! how long will ye look with complacency upon the use of those suicidal cords which tend to depopulate the world by filling it with degenerate wives and mothers, who only serve to perpetuate a puny, sickly, and short-lived posterity ? How long will ye treat with ridicule and contempt those experimental, overt acts of female adventurers, who, panting beneath the weight of the present habiliments of fashion, occasionally step forth in new attire ?

If an erect, healthful and symmetrical form, is essential to "life, liberty, and the pursuit of happiness," every obstacle in the way of its development should be speedily removed. Let us therefore proceed to inquire wherein the present mode of female attire is opposed to such development.

In order to secure a long, slender waist, accommodated to the long, pointed boddice, the under garments, waistcoats or corsets, are fastened about the body, by descending pressure, quite below the natural line of the waist, and above the lifting power of the muscles. Superadded to this, a number of more or less weighty and voluminous skirts are fastened by their narrow bands about the waist. If these bands be drawn tightly around the body, as is quite usual, in no place could a ligature effect more harm ; for the organs in this region being soft, and unable to resist the compressing force, gradually cease to act. But, even if these bands be loosely worn, the weight of the skirts draws them down, until they form a shoulder or terrace whereon they may rest. The lower truncal muscles are thus oppressed, the aggregate weight of the body is diverted from the true center of gravity, and drags upon the spine, its supporting and balancing power is also greatly diminished, and, sooner or later, the once lovely form of the

fair and sportive maid is racked with unspeakable anguish.

This unnatural weight comes upon the very region where nature requires room and expansion, and where, too, the world-renowned corset-board and longitudinal whalebone ribs are so universally applied to *relieve*, forsooth, that downward, dragging sensation of the chest and stomach, which is, in fact, nothing more or less than the direct result of the supposed remedy! At the same time, the downward pressure on the abdominal organs drags upon the diaphragm and lungs, causing the processes of respiration and the pulmonary circulation to be laborious and insufficient. The power of the muscles to support the lower stomach and make the waist round and the chest full and deep, is completely antagonized; while the abdominal organs, being thus unsupported, crowd downward, producing dull, heavy, and pulling sensations at the sides, as well as a sense of what is very expressively termed, sinking and goneness in the region of the stomach. The end of the matter is a general derangement of the truncal organs, a sure and terrible prelude to a sorrowful life, or a lingering death.

It is well known that within a few years a class of most distressing maladies, known as Female Weaknesses, have prevailed and increased in a ratio truly shocking. These constitute an evil, the magnitude of which it is utterly impossible to exaggerate; and it is an evil which affects not only the misguided sufferers themselves, but their posterity after them to the latest time.

There can scarcely be anything more injurious to health than the present pernicious system of dressing, especially the custom of compressing the waist, and allowing the weight of the skirts to hang upon the abdomen. The forced descent of the bowels, thus effected, compresses the descending arteries and nerves, and the ascending veins and lymphatics of the inferior extremities, destroys every

graceful and elastic movement of the body, and renders even walking painful and awkward, producing, at the same time, cold feet, numbness, turgidity, varicose veins, &c. But the effects on the spine, are, if possible, still more disastrous.

The natural form and dependencies of the spine are such as to enable it to maintain the *symmetry*, or rather, perhaps we should say, the *enduring condition* of the body, its adjuncts and their reciprocal action being so arranged as to preserve its true center of gravity, on which the entire mass is beautifully poised. Now, anything which disturbs this order is dangerous to the commonwealth. It is necessary that the viscera be held upward and backward toward the body's center of gravity, by the free and unrestrained action of the abdominal and dorsal muscles, thereby maintaining the balance between the centripetal and centrifugal forces of the body, and at the same time causing the chest to expand, increasing the pulmonary circulation, assisting the vocal organs, and actually uplifting the head and shoulders. In this upright and well supported condition, there is no contraction or caving in of the chest, no sense of weariness, so commonly felt when the equilibrium is lost by pernicious attempts to remodel the body according to fashionable ideas of beauty and grace.

When the body is girded elastically at the loins, and bound around by its muscular bands, preserving the normal condition of the parts, the whole mass being properly poised and actually supported by its own weight, the individual is erect, his movements all free; and, instead of a sense of weariness, ease, grace, and elasticity are apparent, especially in their action on the spirits, imparting cheerfulness, good-humor, and promptness.

The shoulders, and the shoulders only, are designed to bear burdens; but these burdens should be borne so that the balance on the center of the spine, in the hollow of the back, may be preserved. The good effect of preserving

this balance is apparent in the German and Negro classes, whose remarkable erectness and grace of motion are attributable mainly to the habit of carrying burdens on the head; and the Egyptian and Oriental women, who balanced water jars upon their heads, were unsurpassed in symmetry, dignity, and natural grace, so much so, that it is a matter of grave history. The head being balanced upon the top and exactly over the center of the spine, a weight thus placed upon it bears equally on the body, which instinctively assumes its full height, the lower muscles contracting, so as to brace and uplift the inclosed organs, preserving the center of gravity.

Having thus glanced at the effects of the separate and aggregate items of dress upon the form, carriage, and upper truncal development, let us see what attention is demanded by the inferior extremities.

The skirts of almost every woman, high or low, bond or free, not only sweep the ground, but are very full and wide, displaying the greater amount of fabric where there is the lesser proportion of flesh and blood. Now, it is obvious that this can serve no earthly good, as these parts require no such excess of protection from cold; and even did they require it, no multiplication of skirts could ever meet the requisition, their airy and flowing construction rendering the thing impossible. It is true they conceal, but they likewise encumber the legs and ankles, making the effort of walking extremely difficult in head winds, when these skirts, like loose sails, flap about and assume the most fantastic shapes, paying not even the slightest regard to their original adjustment by the modest wearer, or deigning in the moment of peril to afford the least protection from cold or other annoyance. Surely the peculiar fancy of the sex to steer against the wind, should induce them to carry less sail, seeing that they are the weaker vessel.

Instead of protecting one from wet and cold, these volu-

minous earth-trailing skirts are joined by other spirits more wicked than themselves, and then in one combined effort, involving fabric, mud, and water, they manage to enhance the labor of locomotion, increase the draught upon the spine and the pressure upon the pelvic organs, while, at the same time, they subject the poor, blind victim of fashion to the most painful rheumatic tortures. Nor will the most decorous and modest care keep the uncleanly moisture from the hose and ankles. In this unpleasant and offensive condition, which is certainly worse than being drenched in a shower of rain, or standing up to the neck in water, the lady has no alternative but to hasten home, sit by the fire and dry her mop and mop-sticks, inhaling at the same time, in company with her fireside companions, for their mutual refreshment and the benefit of their lungs, the odoriferous exhalations thence arising,—for many among the wise and good dry their shoes and stockings upon their feet! But even then, the surrounding garments, surcharged with unseemly matter, must be changed throughout; when the body, heated by the extraordinary exercise of walking in such a plight, receives a sudden chill, making it next to impossible to avoid that root of many ills, a severe cold. Yet, instead of these immediate attentions, nothing is more common than for the lady to proceed on her way, and either sit one or two hours in church, or make calls of business or pleasure, leaving her inferior matters to take care of themselves, conscious the while that she is sowing the seeds of consumption; for it is admitted that colds taken from damp feet and ankles, are, of all others, the most fatal.

It is vain to imagine that all this may be avoided by raising or spreading out the skirts in walking, for they are so heavy and broad that no modest woman can do more than draw their saturated borders against herself, thus greatly aggravating the evil. Why, even the sole of a wet shoe will usually deposit sufficient mud and water to

give a most untidy appearance to the most perfectly dressed lady, as any person of ordinary observation can easily attest. Many a lady of delicate organization and refinement reaches her home completely exhausted, and after "dragging her slow length" to her chamber, throws herself into a chair, overcome with self-disgust and fatigue, to say nothing of painful apprehension for the consequences. And tell me, ye that know these things, how many visits of charity, how many social parties, and how many wholesome out-door walks are sacrificed to escape a dilemma like this? How many are thus forced to remain pent up in artificially heated apartments until the hue of health is banished from the cheek, and the lusterless eye proclaims the languishing system, and until, also, the danger of taking cold is vastly increased, so that subsequent exposure to the outer air becomes exceedingly dangerous?

Now, all this might be avoided if ladies would only allow themselves to be guided by reason and common sense. Let dress be made at once a subject of rational consideration. And here let me say, that if my contribution shall fail in this particular, it will be simply because my humble efforts are inadequate to the task.

Every garment should rest upon, or hang from, the shoulders, and no article of dress, however light, should ever be attached around the waist sufficiently tight to hold it up. It should be buttoned or hooked to an under jacket, made loosely about the chest and waist, with a half-yoke or plain back, coming up high on the shoulder; thus forming an agreeable and healthful substitute for corsets, whale-bone waists, and other injurious devices. To this waist or jacket should never be attached more than two or three skirts. Of course three would include the dress-skirt. *All quilted skirts, if not too heavy for the purpose, should be converted into bed-clothes.* The length of the skirts might vary according to taste, but in no case should the hem of the garment be less than seven inches from the ground;

and this will enable a lady to ascend a stair-case, with both hands engaged, without stepping upon and tearing her dress, or endangering her limbs or life by a fall. (See Figs. 32, 33 and 34.) Thus equipped, she is suddenly endowed with the power of accomplishing more of the active duties of life, with far less fatigue. Her person, also, is rendered flexible and capable of easy and graceful motion: a pleasing contrast to the pitiable figures we usually see and hear—aye, and *hear*; for we cannot sit beside a fashionable lady without being reminded of the straining of a ship and the creaking of the taught ropes, whilst contact with her waist, when that is possible, feels more like the hard and wooden mast, than the tender and yielding frame of a lovely woman. She tortures herself to become the more beautiful! Surely beings on another planet would never credit the tale, It is, however but the simple, unadorned truth.

Whether rich or poor, black or white, mistress or maid, it matters not, WOMAN is literally “done up” in from four to fourteen skirts, reaching down to the ground, and some of them, *probably*, thick and clumsy. The chambermaid has the use of but one hand in ascending the stairs, the other being always employed in holding up her skirts, as if exhibiting in a mood of irony, and on the principle that actions speak louder than words, the true motto of her sex, “*excelsior* ;” the cook is at her wit’s end, to avoid the burning of herself to death; and, so liable is every lady’s dress, held out as it is, at a preposterous distance from the body by the under skirts, to come in contact with grate or stove, that, to say nothing about the injury which the choicest fabrics thereby sustain,—the most heart-rending sacrifice of life is constantly resulting from this foolish practice.

It would seem that the present dress of woman, so far from being adapted with a view to ease of locomotion, had been studiously designed by some jealous old ogre of

a husband, to keep her from traveling beyond the narrow limits of his doating vigilance, where she might pine and die for want of air and exercise.

If a lady is overtaken in a fault—pardon me, ladies and gentlemen, for *that* could never happen—if a lady is overtaken by a rush of horses or carriages, or borne down by a crowd of people, where is her chance of escape, impeded as she is by her dress? She cannot even get in or out of a public vehicle, car or omnibus, without danger of being dragged onward by the starting of an unruly horse; and in order to step into an omnibus, she is compelled to raise her dress much higher than any one has ever yet proposed to have it shortened, through fear of being thrown forward at the feet of vulgar men, who would see only a fit subject of ridicule. In descending the steps, she is in a still more awkward predicament. Accidents of this sort, of which I have been an eye-witness, have been truly serio-comic, and it was fortunate that in one instance it was not a fearful tragedy.

The skirt, as before observed, is not so much intended for warmth; for that, be it particularly noted, is the province of a closer under garment; but as a modest veil to the lower limbs; as a distinctive mark of the sex; and as such it need be made no fuller than is requisite for easy and convenient motion. An excess over this increases the weight, which every lady should make it her primary object to lessen.

The sleeves of the dress should be so constructed as not to produce the slightest compression of the muscles, it being more essential to health than is generally supposed, that the natural freedom of the arm should be preserved in all its movements.

The pantalets, which should of course be of the same material as the dress, but which in stormy weather might be made of, or protected by India-rubber or oil-silk, should be about two feet in length, and fastened by their tops to



FIG. 33.—Physiological arrangement of Dress; depending from the shoulders, and involving the natural freedom of the limbs and waist,—the skirts being just long enough to prevent stepping upon them in ascending a flight of stairs.

the drawers, these being attached in some convenient way to a loose jacket. I would suggest, also, that the pantalets should be plain and loose, descending far enough to cover the ankles.

The linings should in every instance be made as loose as the garments, so as not to counteract in the least degree the physiological adjustment of the dress.

Respecting the coolness or warmth of the apparel, it is supposed that common sense will dictate the adaptation of fabric to the different seasons of the year.

Let us now glance at the system of Male attire.

Pantaloon, without suspenders, upheld by a tight waistband, girt about the abdomen and pressing down the viscera, just as do the ladies' skirts, cannot fail to produce a displacement of the abdominal organs, and a consequent elongation of the upper truncal cavity, resulting in an unsightly gauntness about the stomach, destroying the easy and full expansion of the chest, and giving rise to a multitude of those distressing maladies which now afflict so large a portion of the human race.

The gentleman's vest is made just short enough to slip upward, as if to remind its possessor that the tendency of his physical aspirations should be towards the erect posture—the foundation of physical education. The analogy between moral and physical science is here obvious, any deviation from uprightness in either case insuring its consequent penalty. The vest is also made just tight enough to act like the ladies' dress-waists, in impeding the freedom of respiration; and the coat, if cut by an accomplished tailor, is made just tight enough to restrain the motions and grace of the body. Indeed, the whole man is "*tight*," and his entire fabrication bears an interesting resemblance to a stuffed suit of clothes, a figure which is strangely considered as having an exceedingly fashionable and distinguished air.

We hesitate not to say that almost no cases of hernia would occur, if in infancy and other periods of life, the

dress were applied so as to lift up the organs instead of pressing them down. It is an astonishing fact, that *only sixty years* ago, hernias or ruptures were very rare ; and it is well known, that in those days the pantaloons, being worn without suspenders, were cut low, so as to bring the hip-band *below* the bilge of the abdomen, thus affording to the whole mass, and the abdominal rings, a support against the protruding influence of the abdominal furniture. What a comment is here presented on this feature of the modern fashions of both male and female dress !

It cannot be denied, however, that pantaloons, as at present worn, are well adapted for clothing the limbs, and this is accomplished without any superfluous fabric. Those who wear them may seek adventures, face dangers, and even be *discreetly valorous* in the hour of peril, with all the chances in their favor ; for, of all the marvels that enrich the page of history, none are more miraculous and startling than the hair-breadth escapes effected by thus improving the locomotive power.

Being compact, and fitting closely, the trowsers are exempt from most of those inconveniences which are inseparable from the skirt ; neither do they gather a mass of wet and dirt, to increase the difficulty of walking.

The construction of dress, according to the principles here laid down, does not interfere with the free exercise of individual taste ; while, at the same time, a little experience will convince all, especially the ladies, that whalebone waists are only to be used in suicidal and murderous attempts to adapt the body to the dress.

O that American women could be aroused to that independence of character which is so emphatically their birth right. Is not the cardinal feature of the American heart its *independence* ? and is not independence the cardinal feature of American history ? Why, then, in an emergency like the present, should American women, the better portion of the American heart, seem to be wanting in that



FIG. 34.—Physiological arrangement of Dress; depending from the shoulders, and involving the natural freedom of the limbs and waist,—the skirts being just long enough to prevent stepping upon them in ascending a flight of stairs.

independence of thought and action which is absolutely necessary to effect this great reform? Where is their moral courage? Where is the dignity and self-respect needful to appear in a rational mode of dress—to adopt an AMERICAN COSTUME, which, it is evident, will greatly promote happiness, by imparting strength, cheerfulness, and freedom.

Let America take the lead in this reform; and, when other nations come to see that the changes thus made are not the result of ephemeral whims and caprices, but that they are based upon true science, the most clearly elucidated laws of physiology, the soundest reason, and the plainest common sense, they will undoubtedly admire and imitate.

No woman, once relieved from undue compression about the chest and waist, bearing down the lungs, diaphragm, and abdominal viscera, upon the indescribably susceptible and easily injured pelvic organs, would listen for a moment to any proposal to resume her fetters. See her thus enfranchised. How easy she breathes! The whole region, from the throat to the pelvis is left free to perform its natural functions. All the organs are returning to their homes, and if, by the mischief of bad dressing, any of them should be unable to get back to their anxious relatives, they must be led thither by judicious *mechanical* means. Our system of appliances for restoring the deranged mechanism of the body enables us to heal all family quarrels. Harmony, peace, and concord must resume their sway.

Looking upon symptoms as unavoidable expressions, truthfully indicating the origin of disease, we direct our researches and remedies to the primal cause. Had nature been allowed to perform her part without opposition, our suggestions and our aid would have been gratuitous; but when she has been contemptuously flouted as an ignorant bungler, having no idea of beauty or symmetry, and when, after gently expostulating, she has finally avenged herself by the infliction of multitudinous and dire diseases, bringing in

their melancholy train an almost incredible amount of anguish and torture, as mournfully illustrated in cases of consumption, dyspepsia, general debility, melancholia, hypochondria, spinal deformities, and a host of other excruciating sounds—when I say she has thus avenged herself for being treated as an arch-heretic in taste and fashion, our remarks will be duly estimated, and the application of mechanical means for the amelioration of human suffering, hailed as a powerful auxiliary in checking the progress of disease, and rebuilding the ruined temples of a degenerate race.

MEDICO-MECHANOLOGY.

DR. BANNING'S INSTITUTE,

FOR THE TREATMENT OF CHRONIC DISEASES

BY

MECHANICAL MEANS,

NO. 22 BOND STREET, NEW YORK,

DR. BANNING, who is the developer of the New Theory of the *Mechanical Origin and Treatment of Chronic Diseases* and who is the Inventor of the Body-Brace, Spinal-Prop, Spino-Shoulder-Brace, Truss-Brace, Rupture-Truss, Traveling-Companion, Pelvic and Child-bed Girdle, and of Galvanic Attachments for all of the same, is now permanently established at No. 7 Bond Street, New York, for the treatment of cases of Consumption and other pulmonary complaints, Bronchitis, Dyspepsia, Diseases of the Heart, General Debility, Melancholia, Hypochondria, Spinal Derangements and other deformities of body, Chronic Diarrhoea, Hemorrhoids, Constipation, the several varieties of Hernia, Prolapsus Uteri, and the protean group of symptoms termed Female Weaknesses.

He has placed Consumption in the above category, for the reason, that almost nine out of ten of the so-called consumptive cases, are caused and perpetuated, like most other chronic affections, by a simple *mechanical displacement* of the internal organs, and not by a diseased condition of the same, which displacement makes these cases proper subjects for mechanical appliance.

Dr. BANNING calls attention to the established fact, that whilst the above maladies have resisted the ablest exclusive constitutional treatment by medicine, they have generally yielded to the application of his mechanical devices, as demonstrated by the effects of more than forty thousand of his instruments in the United States: the majority of the experiments being of recent date.

These appliances do not, like other braces and supports, weaken or restrain the growth of the suffering parts. They are also cool and light, and produce the most comfortable sensation the moment they are applied. They are all based on the laws of Anatomy and Physiology, and act in perfect harmony with the mechanism of the human frame. Another important and exclusive peculiarity of these appliances is, that, when the predisposing and perpetuating causes are removed, their use is no longer necessary. They should, however, be *gradually* laid aside.

LIST OF MECHANICAL APPLIANCES.

Body-Brace.
Spinal-Prop.
Spino-Abdominal-Shoulder-Brace.
The Rupture-Truss.
Brace-Truss, for Rupture of the Groin.
Brace-Truss, for Rupture of the Navel.
Brace-Truss, for Rupture of the Thigh.

Pile-Brace, for Prolapsus Ani and Piles.
Traveling-Companion, for feeble Travelers.
Pelvic or Child-bed Girdle, for Hip-Diseases, and for Pregnant and Lying-in Women.
Galvanic Attachments.